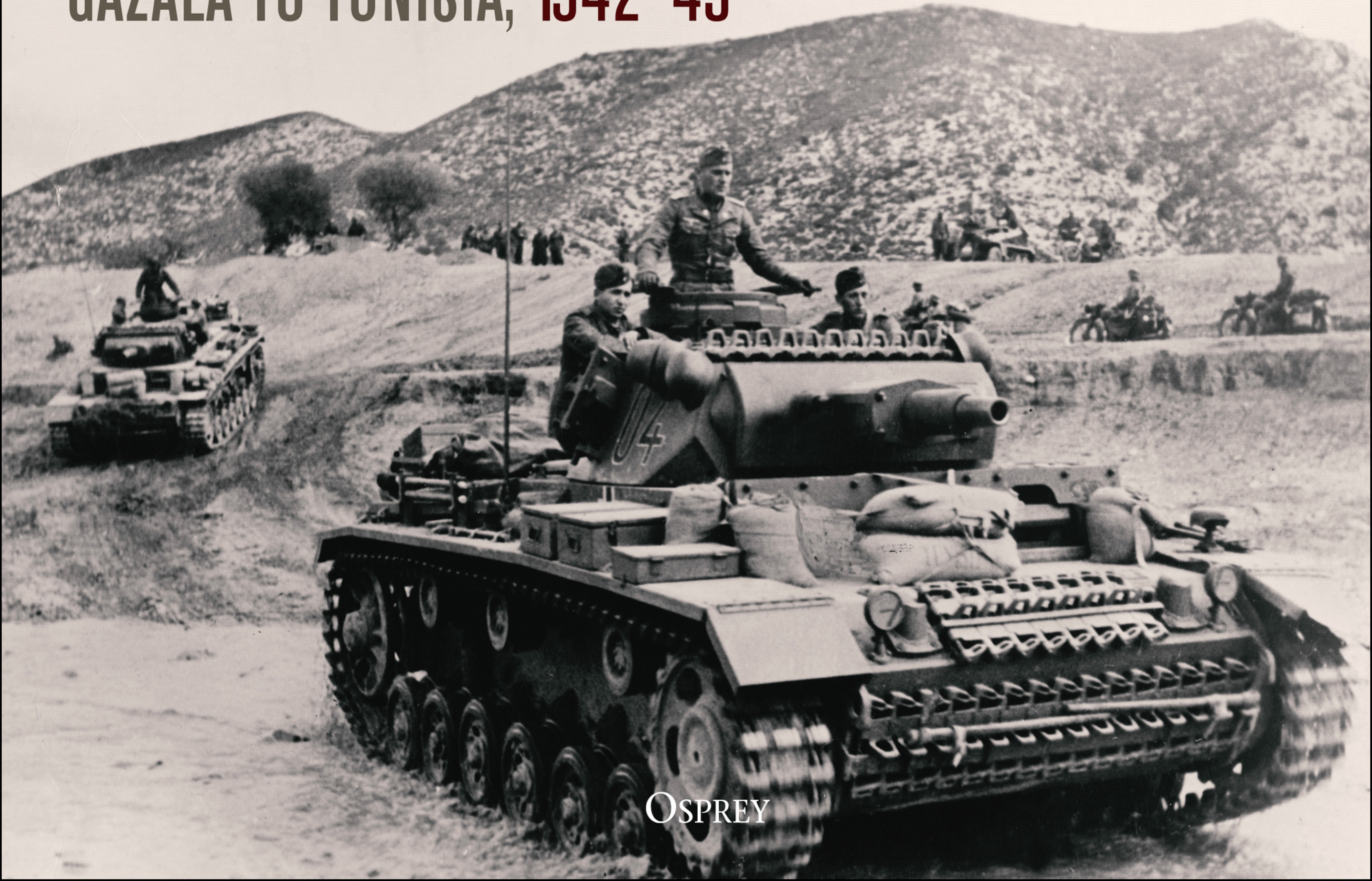
ROBERT FORCZYK

DESERT ARMOUR

TANK WARFARE IN NORTH AFRICA

GAZALA TO TUNISIA, 1942–43



OSPREY

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PUBLISHING

ROBERT FORCZYK

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GAZALA TO TUNISIA, 1942–43

DEDICATION:

Dedicated to Colonnello Lorenzo D'Avanzo, commander of the IX Battaglione Carri Leggeri, killed in action, 16 June 1940; Major Henry Rew, commander A Squadron, 7 RTR, killed in action 9 December 1940; Obergefreiter Fritz Wilsdorf, 1 Kompanie, Panzer-Regiment 5, killed in action 2 April 1941; and Sergeant Delmer E. Park, 2nd Armored Division, killed in action 25 November 1941.

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CONTENTS

Introduction 8

CHAPTER 1: Desert Interregnum 10

The Afrika Korps Recovers, January 1942 10

All Quiet on the Gazala Front, February–April 1942 22

CHAPTER 2: The Road to Suez 41

Gazala: The Clash of Armour, May 1942 41

Tobruk: Rommel's Victory, June 1942 63

Ruweisat Ridge: The Breaking Point, July 1942 91

CHAPTER 3: Decision in the Desert 109

The Changing of the Guard, August 1942 109

Gearing Up for the Main Events: September 1942 124

Lightfoot: October 1942 142

Supercharge: November 1942 164

CHAPTER 4: Broken Field Running 185

The Race for Tunisia: November–December 1942 185

Stalemate in Tunisia: December 1942–January 1943 210

Kasserine Pass: February 1943 226

CHAPTER 5: Last Stand of the Afrika Korps 252

Montgomery and Patton Strike: March 1943 252

Endgame: April–May 1943 276

In Retrospect 300

Glossary 310

Rank Table 312

Appendices 313

- Appendix 1: Major Tank Deliveries to North Africa, 1942 313
- Appendix 2: Tanks in North Africa, 1942–43 314
- Appendix 2b: Penetration of Tank and Anti-tank Guns, 1940–43 316
- Appendix 3: Orders of Battle for Armoured Units in North Africa, 1942–43 318

Bibliography 339

Notes 349

Index 360

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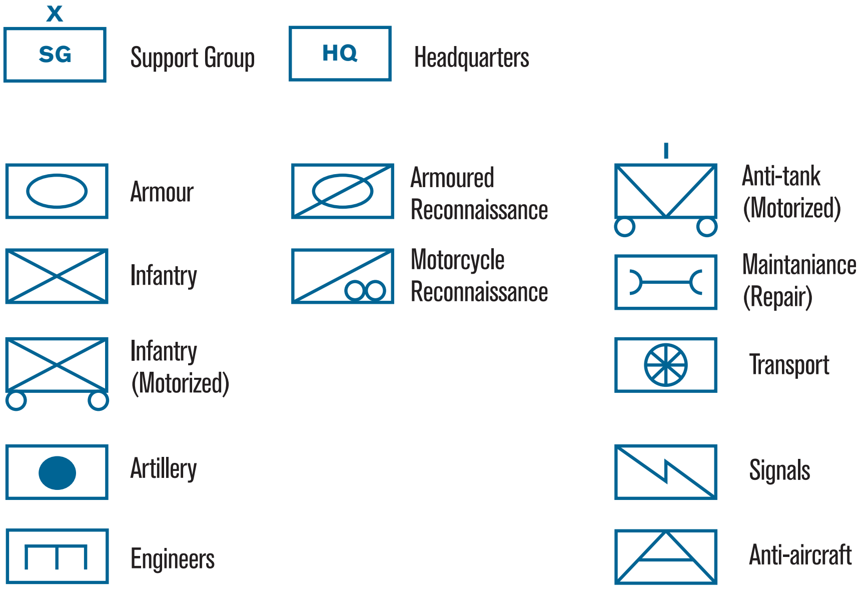
TACTICAL SYMBOLS


X
SG
Support Group
HQ
Headquarters
Armour
Armoured Reconnaissance
Anti-tank (Motorized)
Infantry
Motorcycle Reconnaissance
Maintaniance (Repair)
Infantry (Motorized)
Transport
Artillery
Signals
Engineers
Anti-aircraft

INTRODUCTION

By the standards of the Second World War, the initial campaigns in the North African desert in 1940–41 were relatively small affairs, involving only a handful of divisions on each side. Even though North Africa was ostensibly the primary theatre of war for the British Empire in this period, only two of 37 British and two of 17 Commonwealth divisions were actively engaged in theatre by the end of 1941. Germany had just three of its 250 divisions, with a total of 32,000 troops, fighting in North Africa. One of the primary reasons that such small forces were deployed in North Africa was the logistic challenges that each side faced and the austere nature of the theatre. It took Britain about four weeks to send a convoy around the Horn of Africa to reach Egypt, a distance of about 22,000 kilometres. Along the way, cargo ships could be lost to enemy action and even if a convoy arrived intact at Suez, it took additional weeks to off-load troops and tanks and prepare them for combat. Although an Italian convoy could reach North African ports in just two days, losses to aggressive British air-sea interdiction efforts were often severe and units unloaded at Tripoli might spend a week or more moving up to the front. Moving bulk supplies, like ammunition, fuel and water, proved even more difficult and had to be conducted on a near continuous basis. Consequently, both sides faced considerable difficulty in massing combat power for a decisive operation in such a remote, austere theatre.

In 1942, both sides committed additional reinforcements to the North African theatre in hope of achieving a knock-out blow. The scale of armoured operations increased dramatically during mid-1942, with several actions involving corps-size armoured formations against each other. Both sides also began the transition to true medium tanks, equipped with 75mm guns that could fire either AP or HE ammunition, which quickly rendered earlier light tanks fit only for reconnaissance missions. The integration of air, artillery and engineer support also evolved rapidly on the battlefields of 1942–43, which led to organizational and doctrinal changes. American tanks made their first appearance on North African battlefields in late 1941, and one year later, US Army armoured units began to arrive in theatre, adding the need for joint operations doctrine into the mix as well.

When the North African campaign shifted into Tunisia in November 1942, armoured operations had to adjust to a region that was more heavily populated, had a better road net, more diverse terrain and heavier rainfall. The mountainous terrain in central Tunisia channeled mechanized movement and often gave a substantial advantage to defenders. Unlike Libya and Egypt, Axis forces operating in Tunisia were much closer to major ports and airfields, which enabled reinforcements from Europe to be fed directly into battle.

This volume begins with Rommel's second offensive in Libya and concludes 17 months later with the Axis defeat in Tunisia. In that interval, armoured spearheads not only led the campaigns in Libya, Egypt and Tunisia, but established a model for future air-ground high-intensity offensive operations, much of which is still valid even in the 21st century. While the tanks of 1940–43 now seem technically archaic, the operational principles and tactics used by modern armoured units represent a direct evolutionary descent from the methods used in these earlier campaigns.

CHAPTER 1:
DESERT INTERREGNUM

THE AFRIKA KORPS RECOVERS, JANUARY 1942

'The remains of the German Afrika Korps and the Italian Army are pouring back along the Sirte on the road leading to Tripoli. The main objective – destruction of the enemy's forces in the Western Desert – has been accomplished. The German armour has been destroyed and the handful of German tanks that remain are attempting to escape in panic to Tripoli.'

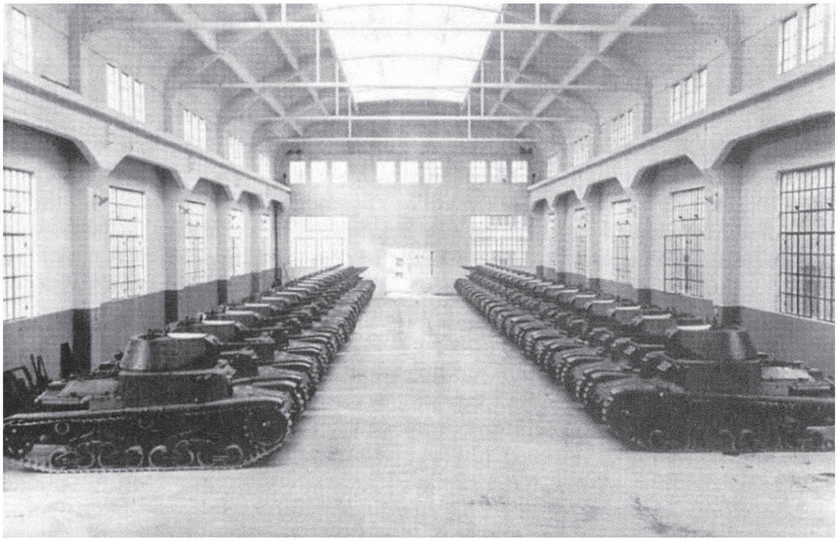
Reuters News Agency, Cairo, 26 December 1941

Despite the tactical victory at El Haseiat, Rommel decided to continue his retreat in order to prevent his depleted command from being outflanked. On the morning of 1 January 1942, the Axis forces began quietly pulling out of Agedabia but left a strong rearguard to deceive the British. By 6 January, all of the Axis forces had reached the vicinity of El Agheila, which could not easily be outflanked due to salt marshes in the area. Rommel placed the Italian units in front as a screening force, while the DAK units were pulled back into reserve to rest and refit. In December, the Divisionskommando z.b.V. Afrika had been re-named the 90. leichte Afrika Division. On 5 January, the Italian M.43 convoy reached Tripoli with 56 German tanks, over 500 new motor vehicles, 13 5cm Pak 38 anti-tank guns, 15,379 tons of fuel and 2,417 tons of ammunition. A week later, another vessel brought in ten more German tanks and the first three Sd.Kfz 6/3

A row of nine new Pz III Ausf J tanks at the MAN facility in Nürnberg. Germany built only 350 tanks and assault guns in January 1942, of which 159 were Pz IIIs. Roughly 16 per cent of German tank production was sent to the North African theatre. (Author's Collection)

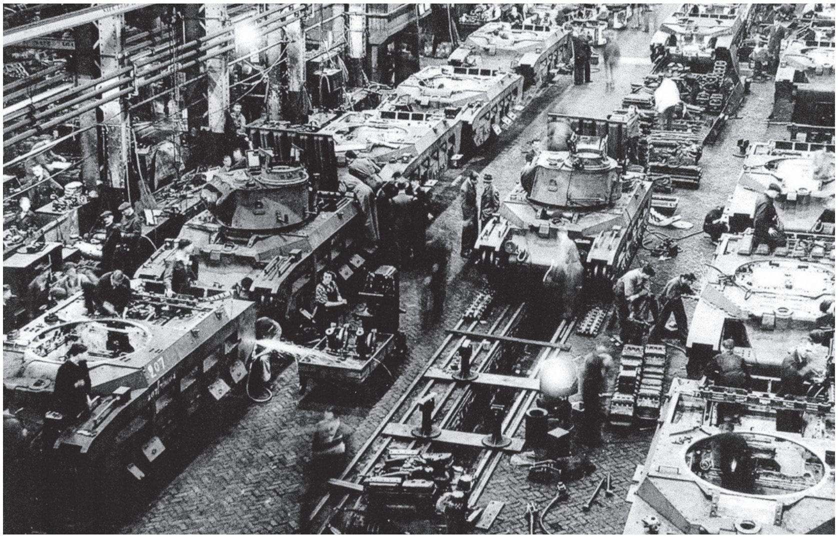
halftracks (the 'Diana') equipped with captured Soviet 76.2mm Pak 36 (r) guns. By mid-January, the DAK had nearly 100 operational tanks – a fact missed by British intelligence.[1] Although Enigma intercepts kept Auchinleck fairly well informed about enemy intentions, they often missed critical pieces of information.

In mid-January 1942, the Italian CAM (Corpo d'Armata di Manovra or Corps of Manoeuvre) also received two medium tank battalions (X, XI), equipped with a mix of M13/40 and some of the new M14/41 tanks. The M14/41 was Ansaldo-Fiat's effort to upgrade the M13/40 with a better engine (the 145hp SPA 15T), but the only real advantage of this model was a slight boost in mechanical reliability under desert conditions. In addition to the M14/41, the first two groups of Semovente da 75/18 self-propelled guns arrived in Tripoli, along with one group of truck-mounted dual-purpose 90/53 guns. Yet despite the arrival of new equipment, the ability to reconstitute the CAM was complicated by the Commando Supremo's decision to deploy the 133ª Divisione Corazzata 'Littorio' to Tripoli as well. Initially, all the new equipment was assigned to the inexperienced 'Littorio' Division, while the veteran 'Ariete' division was reduced to just three operational M13/40 tanks.[2] Eventually, a compromise was made, whereby the 'Ariete' division was partially re-constituted with new equipment, but the 'Littorio' division retained some for training – which left the CAM with limited combat capability for the first several months of 1942.



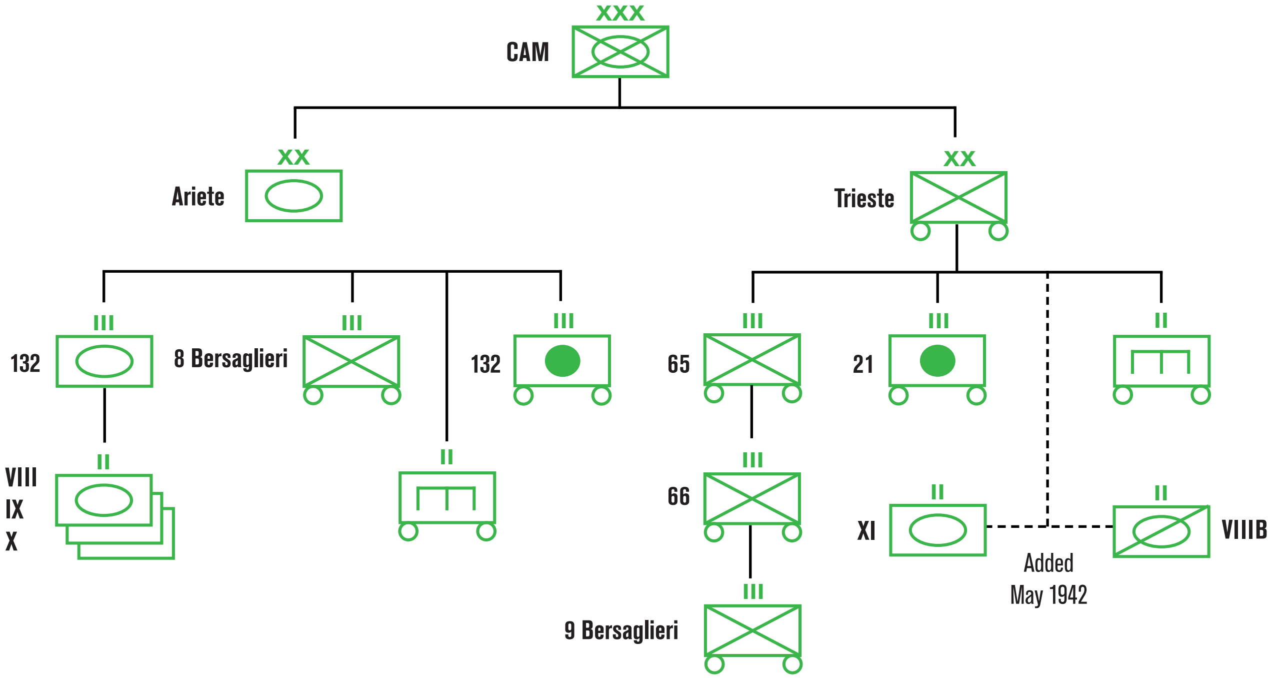
Unlike the other adversaries involved in North Africa, Italian tank production peaked in 1941 and was in decline by 1942. Only 376 M14/41 medium tanks were built in 1942. (Author's Collection)

On the British side, Lieutenant General Alfred Godwin-Austen's XIII Corps, with its forward headquarters at Antelat, was responsible for keeping Rommel in check until sufficient reinforcements and supplies arrived to commence Operation *Acrobat*. Auchinleck assured Godwin-Austen that Rommel's forces were too depleted to mount any kind of offensive action.[3] Until the port of Benghazi could be made operational and the logistic situation improved, the XIII Corps could only afford to deploy limited forces in the forward areas. Brigadier Marriott's 200th Guards Brigade (formerly Bencol) and Brigadier Vallentin's 1st Support Group from the 1st Armoured Division were assigned the covering force role, between Mersa Brega and Wadi Faregh, which amounted to four motorized infantry



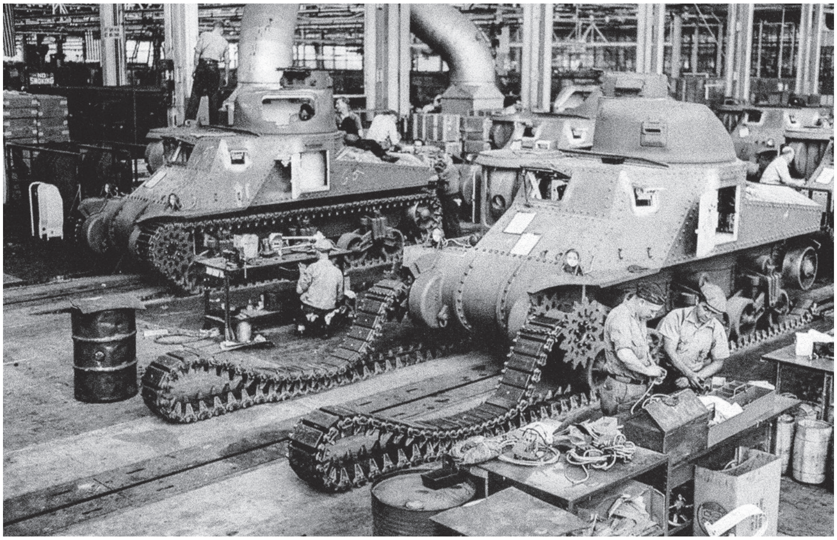
By early 1942, British industry was building over 600 tanks per month, including about 100 Matilda infantry tanks. However, about 30 per cent of British tank production was going to the Soviet Union, whereas only about 18 per cent was going to the Middle East. (Author's Collection)

ITALIAN CORPO D'ARMATA DI MANOVRA (CAM), FEBRUARY 1942


XXX
CAM
XX
Ariete
XX
Trieste
III
132
III
8 Bersaglieri
III
132
II
VIII
IX
X
II
III
65
III
21
II
III
66
III
9 Bersaglieri
II
XI
II
VIIIB
Added
May 1942

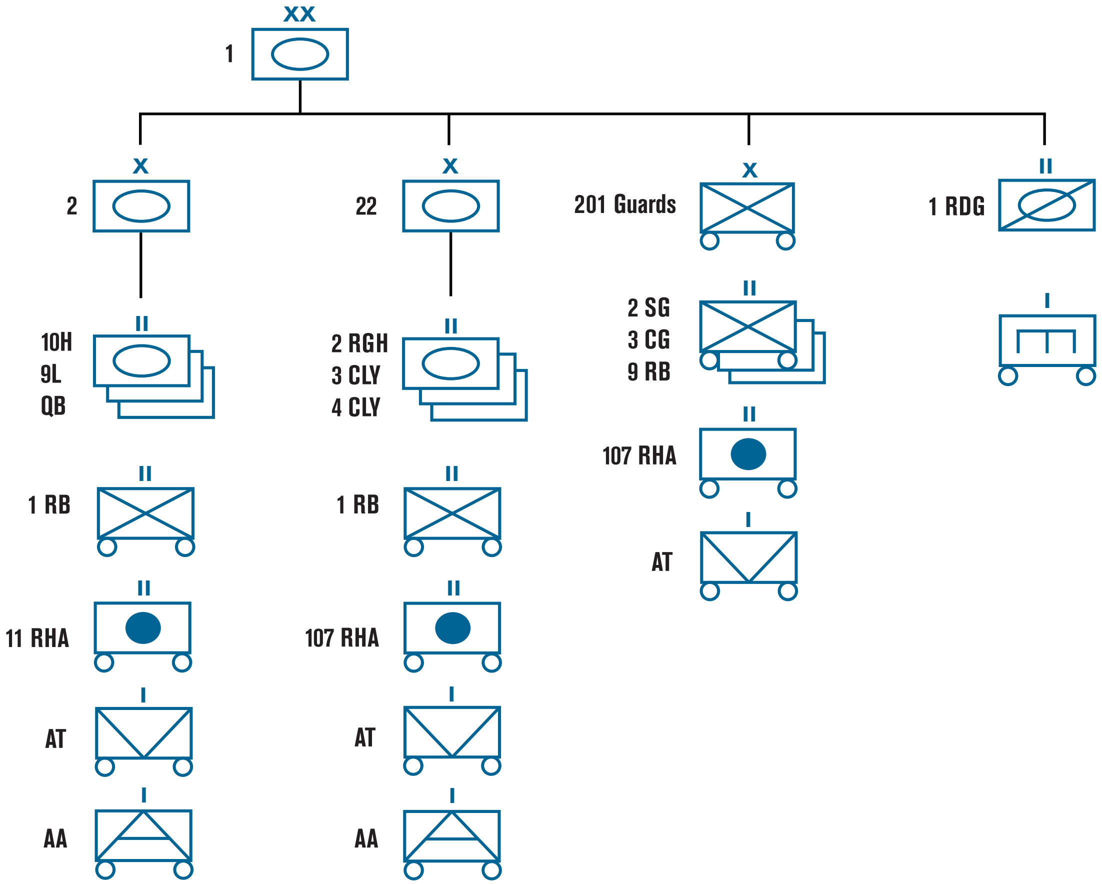
battalions and three artillery battalions. A composite squadron of 24 Stuart tanks from the 3 CLY/4 CLY (County of London Yeomanry) was assigned to provide armoured support to the covering force, along with the Humber armoured cars of the 11th Hussars and 12th Lancers. The newly arrived 1st Armoured Division headquarters was supposed to control the covering

Tanks:
160–220x M13/40 medium
Armoured Cars: 60
Anti-tank: 32
Artillery:
48x 75mm
40x 100/105
20x Semovente da 75



M3 medium tanks being assembled at the Detroit plant. By January 1942, US factories were building over 400 M3 mediums per month, of which the majority were being provided to the British and Soviets through Lend Lease. (Author's Collection) force, but its commander, Major General Herbert Lumsden, was wounded by a Stuka attack on 3 January 1942. In his place, Godwin-Austen moved the tank-ignorant Major General Frank Messervy from 4th Indian Division to temporarily take command of the incomplete, inexperienced 1st Armoured Division. Behind the covering force, Colonel Raymond Briggs' 2nd Armoured Brigade was brought up to relieve the battered 22nd Armoured Brigade and it reached Antelat after a grueling 700km-long march by 6 January, which left it with only 130 operational tanks.[4] Unfortunately, there was very little fuel and no maintenance units at Antelat, which left the tired brigade in a precarious state. Indeed, the tanks were so short of fuel that they were told not to conduct routine 'cranks' to recharge the radio batteries. Furthermore, indiscreet radio traffic from the brigade revealed details about its mechanical problems, lack of training and shortage of fuel – which were overheard by the DAK's radio intercept company. Further back, the 4th Indian Division had two brigades (5, 7) deployed near Benghazi, along with 48 Valentine tanks from the 8 RTR (Royal Tank Regiment).

BRITISH 1ST ARMOURED DIVISION, MAY 1942



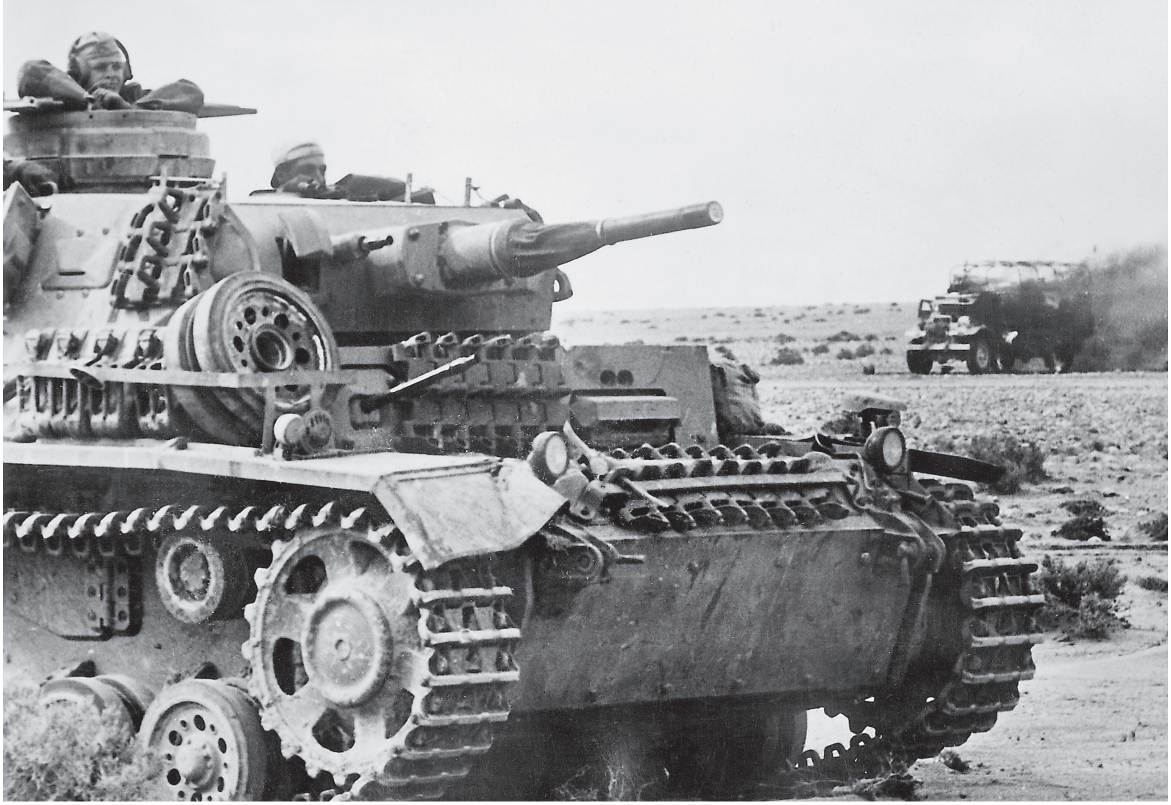
Tanks:
192x Crusader
73x Grant
15x CS tanks
6x Stuarts
Armoured Cars: 80
Anti-tank: 48 (6-pounder)
Artillery:
72x 25-pounder

By March 1942, American tank production lines were already beginning to shift to the superior M4 medium tank. Over 8,000 M4 medium tanks were built just in 1942. (Author's Collection)

Once Rommel had partially reconstituted the 15. Panzer-Division, now under Generalmajor Gustav von Vaerst, he began to consider a counter-offensive. Von Mellenthin correctly assessed that British forces south of Benghazi were dispersed and low on fuel, which suggested a window of opportunity. However, Rommel did not share his intentions with his senior subordinates until 16 January and he deliberately misled the Commando Supremo and OKH, since they would have vetoed such a risky idea. On 18 January, the plan for a limited counter-offensive was formalized and preparations begun. The Italian CAM was included in the plan, but only in a supporting role. Heavy rains and sand storms in the days just before the counter-offensive helped to conceal the Axis build-up near El Agheila from RAF reconnaissance. Rommel directed that the operation would be spearheaded by two *Kampfgruppen*: Gruppe Marcks (three infantry battalions with artillery and anti-tank support) would attack along the Via Balbia, while the DAK would advance on their open right flank, near the Wadi Faregh.

The Axis counteroffensive began at 0830 hours on 21 January. The armoured cars from B Squadron, 11th Hussars were the first to detect the enemy advance, but erroneously reported Gruppe Marcks as including tanks. The 1st Support Group had divided most of its strength into four Jock Columns, each with an artillery battery, an infantry company and a few anti-tank guns. While well-suited to screening against a lightly equipped foe, these columns were easily routed by the DAK's main body and 16 25-pounder guns were lost in the hasty retreat.[5] Both the 200th Guards Brigade and the 1st Support Group fell back, enabling Rommel's forces to advance about 15 kilometres on the first day. Messervy assessed the enemy activity as a probing attack (which it was) and ordered the 200th Brigade and 1st Support Group to create a defensive line between Agedabia and El Haseiat, a distance of nearly 50 kilometres. Briggs' 2nd Armoured Brigade was not alerted until 0410 hours on 22 January and was then provided very vague orders to move south to deal with an enemy raiding force.[6] During the day, Rommel received a message from the OKH, indicating that the Panzergruppe was now re-designated as Panzerarmee Afrika (the four *Panzergruppen* in Russia were also re-designated as *Panzerarmeen*).

The Axis offensive resumed on the morning of 22 January, meeting only light, disjointed resistance from both British brigades. Soft sand, due to recent heavy rains, caused problems for both sides' wheeled vehicles. Many British



Reinforced with a shipment of new tanks, Rommel was able to launch a counteroffensive on 21 January 1942, which quickly overran the British outposts near Agedabia. A Pz III advances past a burning British truck. (SDZ, 00089833)

forward units, including the 12th Lancers, were short of fuel and at least three Humber armoured cars had to be abandoned. Around noon, the Stuart tanks from Arthur Force managed to knock out one enemy Pz IV, while assisting the withdrawal of the 1st Support Group. By 1100 hours, Gruppe Marcks reached Agedabia, just as the British covering force fell back. The British response to this enemy action was timid and uncoordinated, to say the least. The retreat of Marriott's 200th Guards Brigade left the Via Balbia uncovered and Briggs' 2nd Armoured Brigade advanced 30 kilometres to Saunnu, then further south in search of the enemy. Messervy directed the 1st Armoured Division headquarters to fall back, which exacerbated communications problems and made coordination between the three forward British brigade groups problematic.

It is worth noting that all three regiments in the 2nd Armoured Brigade had been converted from cavalry units just prior to the war and had very limited experience with medium tanks compared to the RTR battalions. For example, Captain Douglas R. B. Kaye in the 10th Hussars had joined the regiment in 1931 but spent most of the decade in India, focused on 'polo, pig-sticking, shooting and jackal hunting'. After a brief sojourn in Palestine as a military provost, Kaye rejoined the 10th Hussars when it reached Egypt in November 1941. Although he had never been in a tank or used a wireless radio set, Captain Kaye was offered command of C Squadron. Handing over a front-line tank squadron to a completely unqualified officer is a recipe for disaster, although Kaye proved to be an upwardly mobile survivor.

Although Rommel's performance was often sub-par during Operation *Crusader*, he demonstrated considerable command ability in leading this counter-offensive and in sensing where the British forces were weakest. Once Agedabia was secured, he ordered Gruppe Marcks to press on to Antelat, which it reached by 1530 hours. From there, Marcks pushed on to the outskirts of Saunnu by dusk and scattered some of the motor transport belonging to 2nd Armoured Brigade's B-echelon. Upon learning that their support units were under attack, the 2nd Armoured Brigade reversed course during the night and headed back to Saunnu. However, Marcks had not left any troops in Saunnu, but instead tried to swing around to the east to envelop the British armoured brigade, while the DAK came up from the west; Rommel's intent was to crush the British 1st Armoured Division between these two pincers.[7]

Rommel's pincer attack did not come off as expected. During the night of 22/23 January, the 1st Support Group retreated through the gap in the two German *Kampfgruppen* and headed toward Msus. Briggs' brigade advanced as a dispersed formation, slowly due to limited fuel, and did not approach Saunnu from the south until 1000 hours on 23 January. The 15. Panzer-Division, approaching Saunnu from the west, spotted the approaching British armour and deployed Kampfgruppe Mildebrath (with 13 Pz III and three Pz IV), some 5cm Pak and two 8.8cm Flak guns as a blocking force. Around 1115 hours, the lead squadron from Lieutenant Colonel John R. MacDonell's 9th Lancers (9L) encountered Kampfgruppe Mildebrath but was quickly shot to pieces. The German tanks occupied hull-down positions, which gave them a significant tactical advantage. Briggs ordered Lieutenant Colonel Charles B. C. Harvey's 10th Hussars to attack the German positions. Firing smoke rounds from their two Crusader CS tanks, the Stuart tanks of Major Anthony D. R. Wingfield's B Squadron came on fast, despite the intense German fire, but Mildebrath used one of his Panzer-Kompanie to move forward and flank the British, which inflicted heavy losses.[8] Altogether, the British lost at least 18 tanks in the morning action west of Saunnu, versus six for Mildebrath (including two Pz IV *Totalausfälle*).[9] By noon, the entire 15. Panzer-Division had joined the action and the 9th Lancers were isolated from the rest of the brigade. Rommel ordered the Panzer units to push on to Saunnu and encircle the enemy units before they could escape, which led to a desperate action in the late afternoon. Mildebrath attacked with his ten remaining Panzers and managed to overrun a South African artillery battery which was supporting the British tanks, although this cost him five of his own tanks. Eventually, Mildebrath managed to occupy Saunnu by 1755 hours. Altogether, the Germans had at least 11 tanks damaged or destroyed in the action around Saunnu, but they controlled the battlefield and could salvage most of their wrecks. In contrast, the British lost over 40 tanks in the action and the 10th Hussars was reduced to just eight tanks. Due to fuel shortages, the 9th Lancers was forced to destroy four of their Stuarts when they retreated.[10]

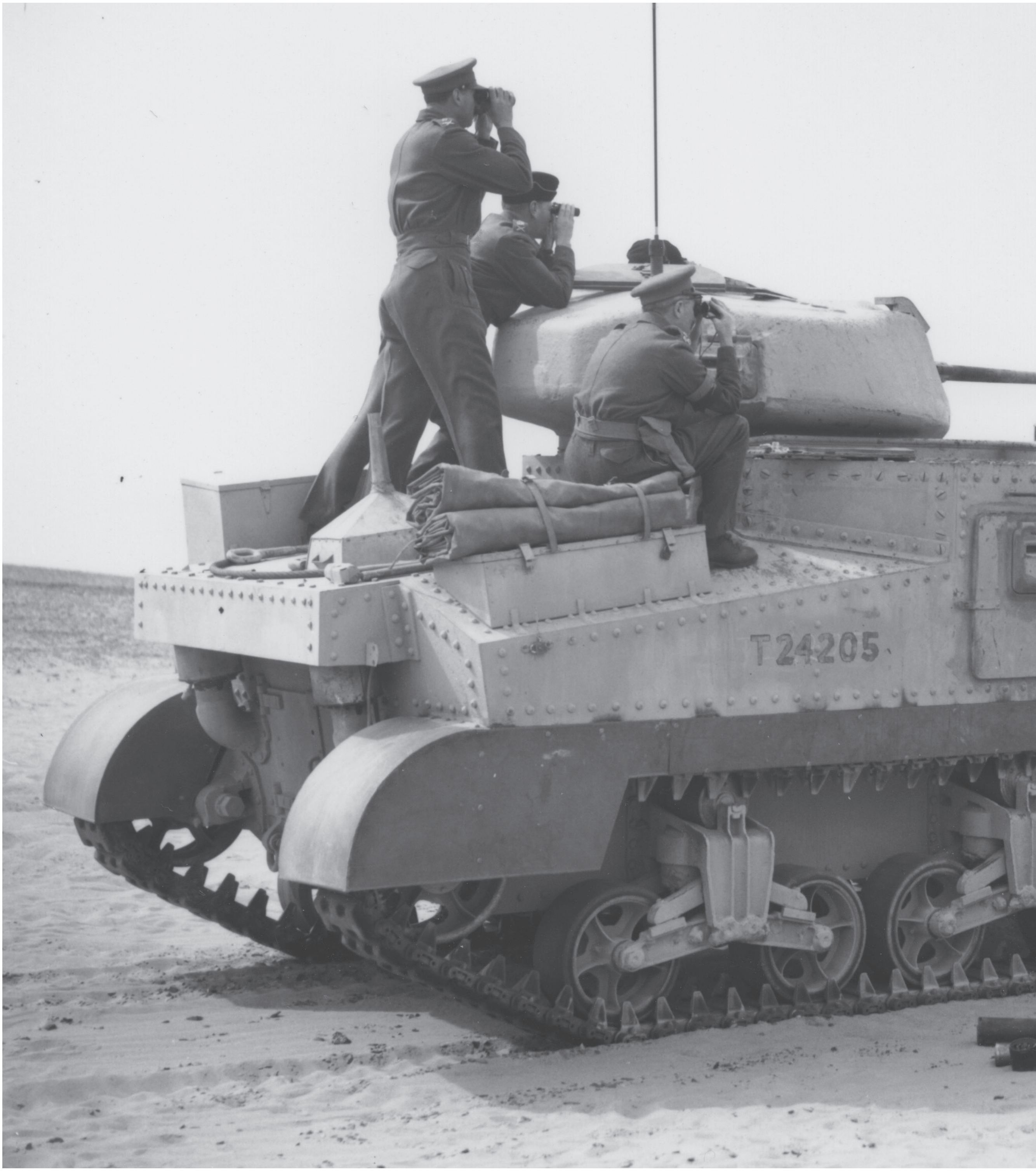
A Crusader tank burns. The Germans attempted a pincer attack against the 2nd Armoured Brigade at Saunnu on 23 January 1942, which inflicted heavy losses. (SDZ, 00333551)

Even though the armour of both sides had been in close proximity when dusk fell on the night of 23/24 January, contact was lost during the night. At dawn on 24 January, Crüwell ordered Kampfgruppe Cramer to pursue the fleeing British armour, which resulted in another meeting engagement 10 kilometres to the north of Saunnu, which went badly for Briggs' brigade. Briggs retreated toward the supply depot at Msus (9L was separated from the brigade), with his brigade reduced to 41 operational tanks.[11] By this point, Godwin-Austen had received enough information to indicate that the enemy activity was not merely a probe and requested permission from Ritchie to withdraw all his forces toward Benghazi and the supply depot at Msus. Ritchie initially granted Godwin-Austen latitude for a withdrawal, but then changed his mind when Churchill leaned into the 8th Army decision-making process. Upon learning that preparations were being made to evacuate Benghazi, Churchill sent a signal to Auchinleck to stop this activity and to order 8th Army to stand fast and then counterattack. Auchinleck pressured Ritchie, who now felt compelled to directly countermand Godwin-Austen's orders to XIII Corps – something which simply did not happen in the hierarchy-conscious British army. Indeed, Ritchie directed that 1st Armoured Division mount a counterattack from Msus, not realizing that the moment for such an action had passed. Lieutenant Stuart Hamilton, a troop leader in 8 RTR, noted that his unit was ordered to move toward Benghazi, then away from it, then back toward it within a day, stating that 'this sort of order, counter-order, disorder was most demoralizing in extremely unpleasant conditions because it was cold, wet and nobody knew what the hell was going on'.[12]

Kampfgruppe Cramer pushed on to Msus on the morning of 25 January, overrunning the British supply depot and capturing a large amount of motor transport and support personnel. The remnants of Briggs' 2nd Armoured Brigade retreated to Charruba, to protect the eastern approaches to Benghazi, but seven of his mechanically fragile Crusader tanks broke down.[13] Godwin-Austen now ordered 1st Armoured Division to withdraw to Mechili and 4th Indian Division to evacuate Benghazi, but Ritchie intervened to cancel these orders.[14] While Rommel's *Kampfgruppen* were routing the XIII Corps, both the OKH and the Commando Supremo were trying to halt his offensive because they did not have the resources to sustain it. It is important to note that while the OKH regarded the Afrika Korps as an economy of force effort from the beginning, Rommel never accepted this role and constantly made operational decisions with an eye to garnering more reinforcements and supplies from his reluctant chain of command. Indeed, he typically kept his chain of command in the dark about his plans for a counteroffensive and ignored attempts from the Commando Supremo and Superasi to restrain his advance. Rommel had to pause at Msus because of fuel problems and severe sandstorms, but when he learned from his radio intercept unit that the British were expecting him to continue on toward Mechili and were preparing to evacuate Benghazi, he saw a golden opportunity. He decided to feint toward Mechili with Kampfgruppe Cramer, while actually pivoting his main effort to the northwest to isolate Benghazi.[15]

On the morning of 27 January, Rommel reinforced Gruppe Marcks with A.A. 3 and A.A. 33 from the DAK's Panzer-Divisionen and ordered it to advance northwest toward Benghazi. Marcks continued moving throughout the night of 27/28 January, despite rain and adverse terrain. Rommel also ordered a battlegroup from the Italian 'Ariete' division to advance up the Via Balbia from Agedabia and threaten Benghazi from the south. Rommel joined Gruppe Marcks as it closed in on Benghazi from the east on the afternoon of 28 January and he was in his element, aggressively leading a spearhead unit. Although the Indian 7th Brigade had begun withdrawing from Benghazi, Rommel cut its escape route at 1800 hours on 28 January. Amazingly, the Indian brigade managed to slip through the thin Italian cordon to the south on the night of 28/29 January. Rommel entered Benghazi on the morning of 29 January.[16]

While the capture of Benghazi was a great tactical coup for Rommel, he lacked the resources to continue a protracted offensive. Hundreds of trucks had been captured, but little fuel was available for them. On the British side, Ritchie finally authorized the dispirited XIII Corps to retreat from Mechili to Gazala, but Godwin-Austen asked to be relieved of command on 2 February and he was replaced by Gott. Rommel pursued the retreating British forces, but heavy rain and fuel shortages slowed the German vanguard units to a virtual crawl. Nevertheless, Kampfgruppe Cramer was able to reach Tmimi with 65 tanks on 3 February, then halted 20 kilometres west of Gazala on 4 February. Once the 8th Army elements were close to Tobruk, their supply situation improved,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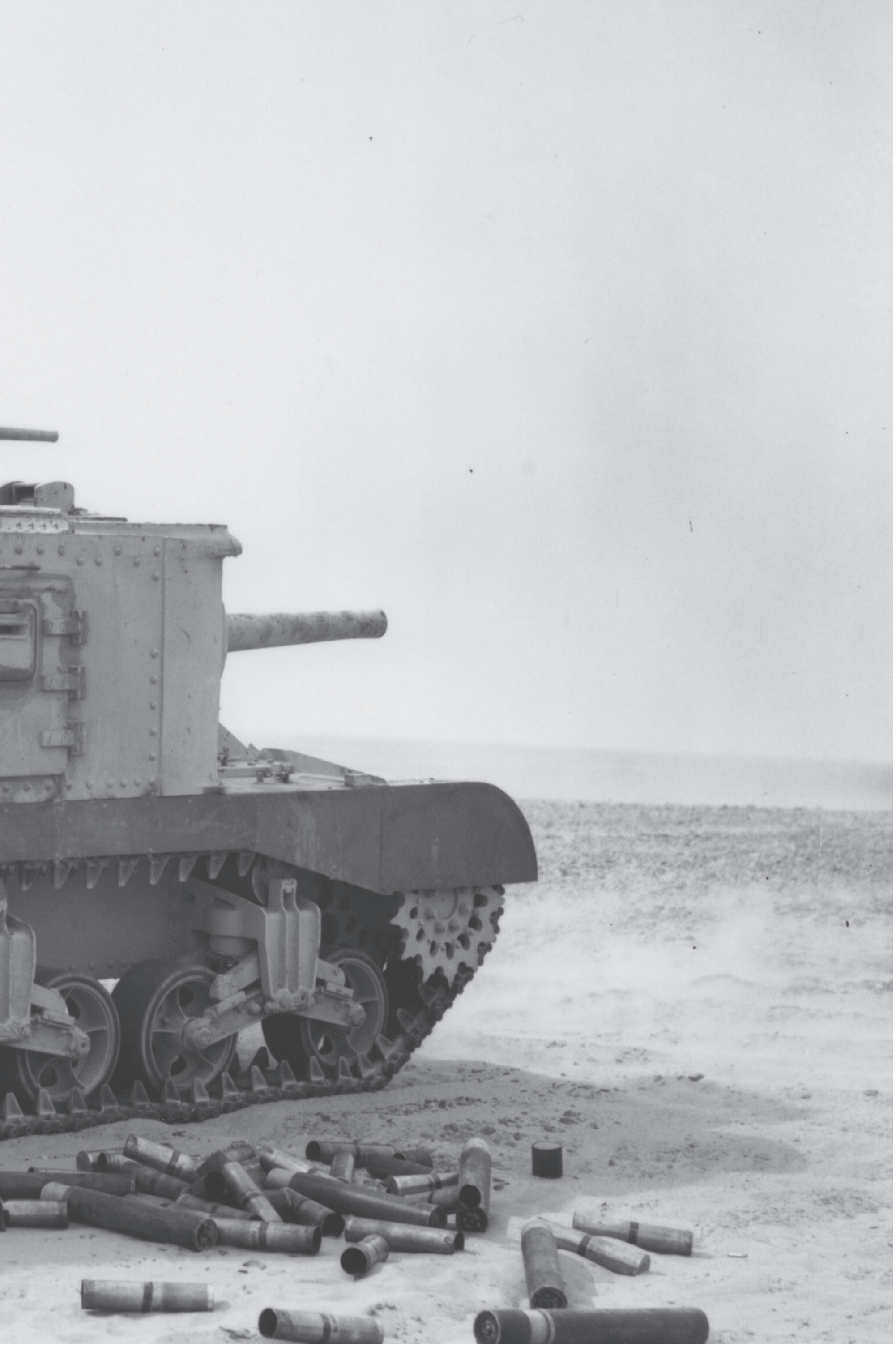


General Auchinleck standing on the back deck of a Grant tank during firing trials in Egypt, 27 January 1942. Auchinleck and other senior British officers present were impressed by the firepower of the Grant's 75mm gun, but failed to notice the limitations of its improvised design. (Battlefield Historian, BHC 01252) whereas the Axis supply situation further deteriorated. By early February, a rare period of static warfare settled over the Libyan desert, with both sides striving to reconstitute their armoured forces for another offensive.

On the British side, Churchill, Auchinleck and Ritchie were livid that the 2nd Armoured Brigade had been routed so easily and lost 72 of its tanks, while ignoring the decisions they made that contributed to this setback. Once again Auchinleck was quick to blame the technical deficiencies of British tanks and the 2-pounder gun for the reverse, even though he had no first-hand evidence of this as a causal factor.[17] It was simply his opinion. Yet if the 2nd Armoured Brigade had been afforded proper time to train and acclimatize to the desert, it would likely have performed better – that was on Auchinleck, who pushed to deploy the unit forward as soon as possible. Indeed, Auchinleck's decision to replace the veteran 7th Armoured Division (and send two of its best regiments to Burma) with the inexperienced 1st Armoured Division was unsound. Churchill's insistence on priority for the follow-on Operation *Acrobat* also worked against 2nd Armoured Brigade's immediate need for fuel for training. Finally, Ritchie and his confusing counter-orders also contributed to 2nd Armoured Brigade's discomfiture and the loss of a veteran corps commander.

ALL QUIET ON THE GAZALA FRONT, FEBRUARY–APRIL 1942

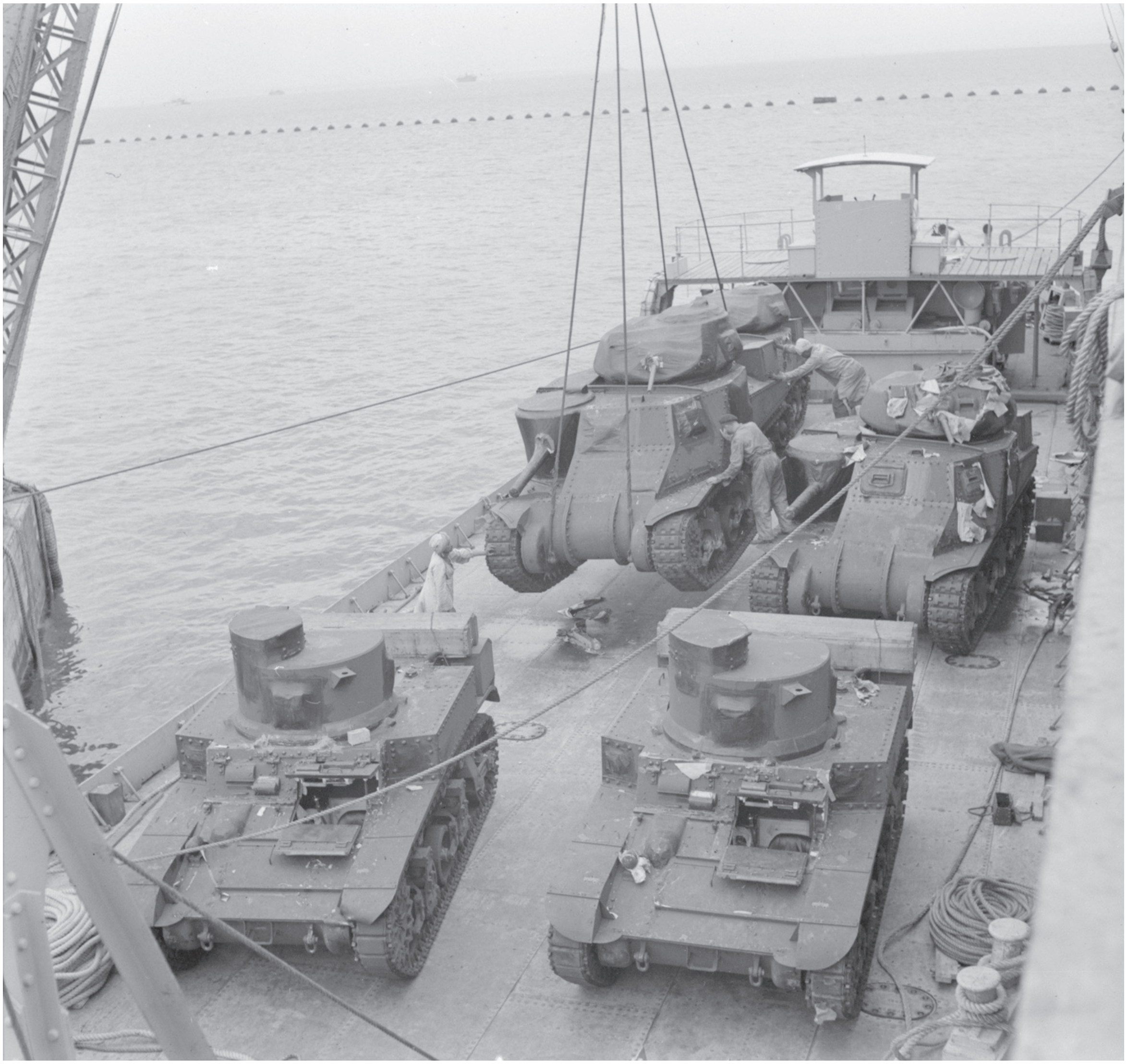
'I consider it to be of the highest importance that you should not break up the organization of either of the armoured divisions. They have been trained to fight as divisions and fight as divisions they should.'

Auchinleck's instructions to Ritchie, 20 May 1942[18]

In preparing for the next round of combat in the desert, both sides made concerted efforts to improve their armoured units with new equipment, new tactics and improved tactical-level organization. Given the heavy personnel losses suffered in Operation *Crusader*, it was also necessary to replace dead, wounded, sick or captured officers. However, the logistic difficulties of transporting tanks and their necessary supplies into the North African theatre and preparing them for combat proved a major constraining factor for both sides. Consequently, both sides were forced to integrate captured equipment into their inventories in order to address deficiencies and shortfalls.

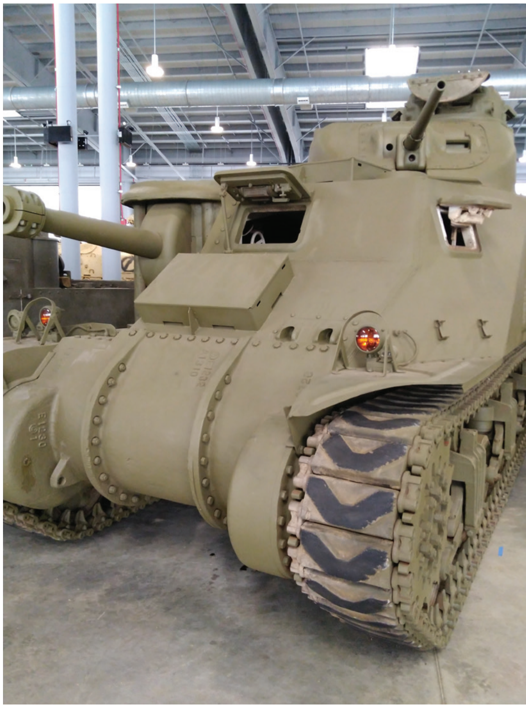
Even as 8th Army was settling into its new defensive positions between Gazala and Bir Hakeim, efforts began to correct problems noted during Operation *Crusader*. As a first step, a new, leaner armoured division organization (the 6/5/3 structure) was created in February 1942. The 8th Army leadership now recognized that the three armoured brigade organization used by the 7th Armoured Division was too unwieldy, and the new division would now have two armoured brigade groups and one motorized infantry brigade group with a total of six armour, five infantry and three towed artillery battalions.[19] There was also a consensus that the support group concept had not worked well in practice, because it tended to disperse infantry and artillery support onto secondary tasks rather than supporting the armour. Consequently, the new structure abolished the support group and attached most of the support assets directly to the brigade groups; it was hoped that permanent attachments would enhance combined arms cooperation. Under the new structure, the division headquarters only retained direct control over a few sub-units, particularly the armoured reconnaissance regiment and the engineers.[20] However, the Royal Engineer support for British armoured divisions remained anaemic, with just a single field squadron (company) assigned, in contrast to the German and Italian armoured divisions, which were supported by a full engineer battalion.

Major General Herbert Lumsden, who had recovered from his wounds, resumed command of the 1st Armoured Division in February. Lumsden was a 42-year-old artilleryman-turned-horsed-cavalryman who commanded a regiment of armoured cars in Belgium in 1940, then an armoured brigade in England in 1940–41. He was a sensible, Camberley-trained staff officer, but like many officers in his generation he was promoted beyond his level of ability and experience. When Gott was promoted to take charge of the infantry-heavy XIII Corps (in itself a poor decision, since Gott had under-performed as a division commander during *Crusader*), Auchinleck and Ritchie decided to promote the hero of the hour, Brigadier 'Jock' Campbell, to command the 7th Armoured Division. Despite his demonstrated bravery at Sidi Rezegh, the intemperate Campbell had a very limited repertoire of command skills, beyond screaming and throwing things at subordinates, and was ill-suited to command an armoured division. Three weeks after receiving the command, Campbell was killed in a vehicle accident. Although Gatehouse, the most experienced senior armour commander in 8th Army, temporarily took charge of 7th Armoured Division, he was not confirmed in the position. A cloud of sorts hung over Gatehouse, due to his brigade's alleged failures during *Crusader*, which he attributed to communications problems. Instead, Auchinleck and Ritchie decided to put Frank Messervy in charge of the division, even though his brief performance as commander of the 1st Armoured Division had been uninspired. Equally unsettling was that Norrie was left in charge of XXX Corps, which controlled both armoured divisions, even though he had demonstrated no real talent for manoeuvre warfare during *Crusader*. To say that these senior command assignments for the senior manoeuvre formations was haphazard is an understatement. Amazingly, no RTR officer had yet been assigned to command a British armoured division in combat – a strong indicator that pre-war regimental prejudices were allowed to influence the selection of command cadre. Equally suspect is Auchinleck's decision to leave Ritchie as commander of 8th Army, even though there was now time to seek a better alternative.



By early 1942, a steady stream of American-built Grant and Stuart tanks were arriving in Egypt. The infusion of hundreds of US tanks enabled the 8th Army to rapidly build up its armoured strength against a resurgent Afrika Korps. (IWM, E9226)

Once ensconced behind the Gazala line, the 8th Army also began removing some lower-echelon commanders who had under-performed in the combat of the past few months. Lieutenant Colonel Dinham Drew, commander of the 5 RTR, had clashed with his brigade commander while also inviting derision from the ranks, who referred to him as ‘Colonel Brew’ (as in 'brewed up' tank). Drew was relieved and replaced by a younger RTR officer, Robbie Uniacke.[21] Likewise, Lieutenant Colonel Ewins, in 3 RTR, was replaced by George ‘Pip’ Roberts, a rising star in the RTR ranks. Roberts represented a new breed of British armour officer: he had been commissioned from Sandhurst directly into the RTC in 1926 and had only served in armour or staff assignments. Although Roberts had no combat experience prior to taking



The limitations of the M3 medium tank are more apparent in this photo of one of the surviving examples at Fort Benning. The limited traverse of the hull-mounted 75mm gun was a problem in mobile battle, and the tall stature of the hull made the M3 difficult to conceal on the battlefield. (1LT Andrei Forczyk)

over 3 RTR, he would prove to be one of the better British armoured commanders of the Second World War. Gatehouse was also removed from command of 4th Armoured Brigade, but after some recovery time in Egypt, he would eventually be offered a division command. After 18 months of near continuous operations, the cadre of older pre-war regular mid-level officers was gradually being replaced by a new crop, which even included Territorials and some former NCOs.

In terms of equipment, the biggest development for the 8th Army was the arrival in Egypt of the first ten American-built M3 medium tanks, christened the Grant. Three Grants had been sent to England in November 1941 for testing and evaluation by the MWEE; one result of this evaluation was the development of sand shields for the tracks and a dust cover for the main gun. Five Grants were issued each to the 3 RTR and 5 RTR on 27 January and field gunnery tests were begun near Alexandria by mid-February. Auchinleck himself went to observe the gunnery tests, standing on the back of a Grant tank. For targets, the Grants fired at several worn-out Valentine tanks, at a range of about 1,500 metres.[22] Under these conditions, the 75mm M2 L/30 gun, firing M72 AP-T rounds, easily scored devastating hits on these static hard targets. The British officers also liked the fact that the 75mm gun on the Grant had the ability to fire both AP-T rounds and M48 HE rounds. Indeed, the powerful impression made by the initial firing trials of the 75mm gun in Egypt was overwhelming and it was quickly regarded as the solution to the growing imbalance between the 2-pounder and German tank armament. Nevertheless, British engineers had been heavily involved in the development of the Grant and were well aware of its awkward design, particularly the sponson-mounted main gun, as well as a host of other issues that would affect its actual use in combat. The lack of a fully rotating turret made the Grant better suited to defensive combat, but this was not made apparent to Auchinleck or other senior commanders. While the 30-ton Grant had decent armoured protection (51mm or RHA across its frontal arc), it was initially plagued with engine defects when it first arrived in the Middle East.[23]

In fact, the 75mm M2 cannon on the Grant was merely an evolution of the French 75mm M1897 field gun, and the Rock Island Arsenal had only begun working on armour-piercing ammunition for this weapon at the start of the war. The M72 AP-T round was a simple solid-shot projectile that had just entered production in November 1941 and was essentially an interim round. The US Army expected the M61 APC-T round, equipped with a ballistic cap and a HE bursting charge, to be the main tank-killing munition. Unfortunately, the design of the base-detonating fuse for the M61 had run into technical problems and would not enter production until early 1942; consequently, the 8th Army would not receive any fully functional M-61 APC-T rounds until after the Battle of Gazala and had to make do with the

Stuart and Grant tanks moving toward the front by railway carriage, late March 1942. British possession of a functional rail line to Mersa Matruh gave 8th Army a decided advantage in logistic infrastructure. (IWM, E9921)

interim M72 AP-T round. In more detailed tests in March 1942, a Grant tank fired M72 rounds at a captured German Pz III that was equipped with 50mm thick FHA and the results were far less impressive. All of the M72 rounds shattered on impact with FHA and only a single projectile achieved a penetration – through the driver's vision block – at a range of 500 metres.[24] A few test M61 APC-T rounds were also fired; these improved rounds had much better penetration, but until they were provided with a working HE fill, the damage they inflicted to the interior of the tank was not likely to guarantee a kill.

Major George B. Jarrett, a US Army ordnance officer sent to Egypt to advise the 8th Army on ammunition issues, and Major Leslie E. Northy, an Australian ordnance officer, collaborated on a technical solution. When the Afrika Korps withdrew hastily from Tobruk it left a great deal of ammunition behind, including nearly 20,000 7.5cm K.Gr. rot Pz. APC rounds for the Kwk 37 L/24 gun on the Pz IV medium tank. Through a combination of curiosity and experimentation, Northy and Jarrett discovered that after minor modifications, the German ballistic capped projectile could be inserted in an M72 shell case and fired from the M2 75mm gun on the Grant. A few of the experimental rounds, dubbed an AP-composite projectile (actually it was an

APCB-HE round), were fired at some Pz III hulks and achieved clean penetrations at 1,000 metres of FHA, with a devastating burst effect inside the target. The RAOC workshops were immediately ordered to begin converting captured German 7.5cm rounds with American-made 75mm AP rounds; approximately 15,000 composite rounds were completed prior to the Battle of Gazala, providing the 8th Army with an armour-piercing round that was superior to anything possessed by the Afrika Korps.

While the RAOC workshops worked to produce AP-composite rounds, the 8th Army's armoured units began a crash programme to convert units to the new Grant tank. Major Jarrett also played a significant role in this conversion effort, leading a team of US Army ordnance instructors. By late March, Britain had already received 665 Grants, with over 400 in the Middle East and 200 more en route, although all of them required modifications to make them ready for combat in the desert. As the Grants were released for issue, the decision had to be made to either concentrate the new tanks in a few units or spread them across most of the armour units in theatre. The 8th Army chose to disperse the Grants and two types of armoured regiments were now organized: a regiment with two squadrons of Grants and one of Stuarts (total of 24 Grant and 20 Stuart) or a regiment with one squadron of Grants and two squadrons of Crusaders (12 Grant and 44 Crusader).[25] The 4th Armoured Brigade in 7th Armoured Division was the first to re-equip, with all three battalions (3 RTR, 5 RTR, 8H) receiving two squadrons of Grants by early April. However, the six armoured regiments in the 1st Armoured Division only received one squadron of Grants each. The 1st Armoured Brigade, still in Cairo, was just converting to Grants when the Battle of Gazala began in May. Altogether, in the next campaign the 8th Army would field a total of 167 Grant tanks spread across a dozen regiments, although there were many reserve tanks available in Egypt. German intelligence was unaware of the arrival of the Grant tank in the Middle East and the re-equipping of British armoured units until 20 May, when von Mellenthin mentioned them in his intelligence assessment.[26]

British tank crews required considerable gunnery training in the Grant, which could engage targets at longer ranges than the 2-pounder. The effective use of the HE rounds took practice, since most tankers were accustomed to firing only high-velocity AP rounds. The fact that the Grant had both a 75mm and a 37mm gun also required experimentation on how best to use these in combat. In terms of tactics, British tankers were irked by the height of the Grant, which was nearly a metre taller than the Crusader tank. British armour tactics favoured the use of hull-down firing positions, which were not feasible with the Grant's sponson-mounted main gun.

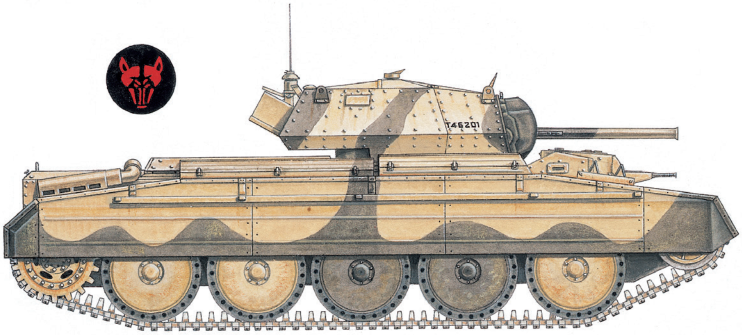
The British also made use of captured German ammunition to address another shortfall in their armoured units. Throughout 1941, British tanks equipped with the Czech-made 7.92mm Besa coax machine-gun had fired only ball ammunition, but it was noted in after-combat analysis that these rounds did not penetrate the gun shield on enemy Pak 38 anti-tank guns or

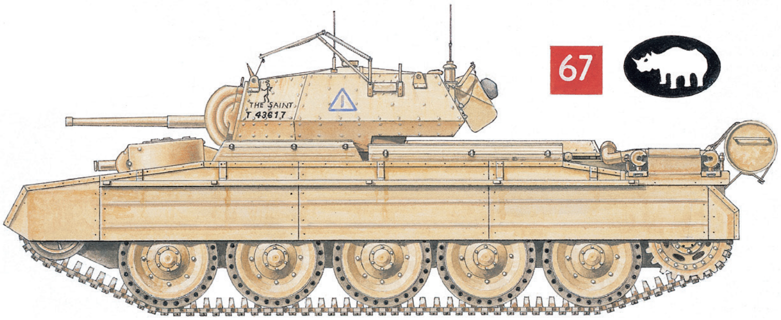
8.8cm Flak guns. In contrast, it was discovered that the 7.92mm coax machine-guns on German tanks fired a solid load of armour-piercing (AP) ammunition, which enabled them to penetrate the gun shields on 2-pounder and 25-pounder guns, thereby eliminating the crews. With simple modifications, the German 7.92mm AP round could be fired from the Besa coax. Enough German machine-gun ammunition had been captured near Tobruk to provide each Besa-equipped tank in 8th Army with about five belts of AP ammunition, which increased the effectiveness of coax fire against semi-hardened targets.[27]

Despite the optimism engendered by the arrival of the Grant tank, the majority of 8th Army's tanks in the next major battle would still be equipped with the increasingly inadequate 2-pounder gun. Field tests in early March indicated that even the 2-pounder APHV-T round could not penetrate the frontal FHA armour on a Pz III at 400 metres, which meant that the Crusader would be at a particular disadvantage against the latest German tanks.[28] The slightly upgraded Crusader II (Mk VIA) tank was now the predominant model in theatre, but only offered an additional 10mm of armour protection across its frontal arc. Likewise, the latest Valentine III variant offered little beyond the additional space created for a loader in the cramped turret. Although the 8th Army leadership looked to a 6-pounder-equipped tank as an essential upgrade, the Crusader III would not be available until September. Mounting the larger gun in the tightly constricted turret proved quite the engineering problem and the results were not entirely satisfactory.

As an interim measure, 8th Army sent requests to the War Office to resume production of 2-pounder APHV-T ammunition and to introduce ballistic capped rounds (APBC) for improved armour penetration as soon as possible. Unfortunately, by December 1941 Britain was experiencing a serious shortage of 2-pounder ammunition due to the cost-saving decision made prior to the war to rely upon a single manufacturer, Hadfields Ltd in Sheffield. Hadfields could only produce a maximum of 80,000 2-pounder rounds per month against a War Office requirement for over 3 million 2-pounder rounds. Efforts to involve other firms in 2-pounder production were complicated, since Hadfield used special equipment and processes that were difficult for other firms to replicate.[29] Consequently, Britain had no significant stockpile of 2-pounder ammunition in early 1942 and the British Army was forced to live hand-to-mouth with its primary anti-tank round for many months. Getting new rounds into production, such as APHE and APBC, would only further increase the monthly shortfall. Thus, the Crusaders, Matildas and Valentines would have to fight the next major tank versus tank battle with limited stocks of an inadequate anti-armour round.

Efforts were also made to reduce the risk of fires on tanks that were penetrated by fabricating 6mm-thick ammunition bins for 2-pounder ammunition.[30] However, this effort simply added one more task to the RAOC workshops in Egypt, which were already overwhelmed with a myriad of tasks including ammunition conversion, modifying American-built tanks,

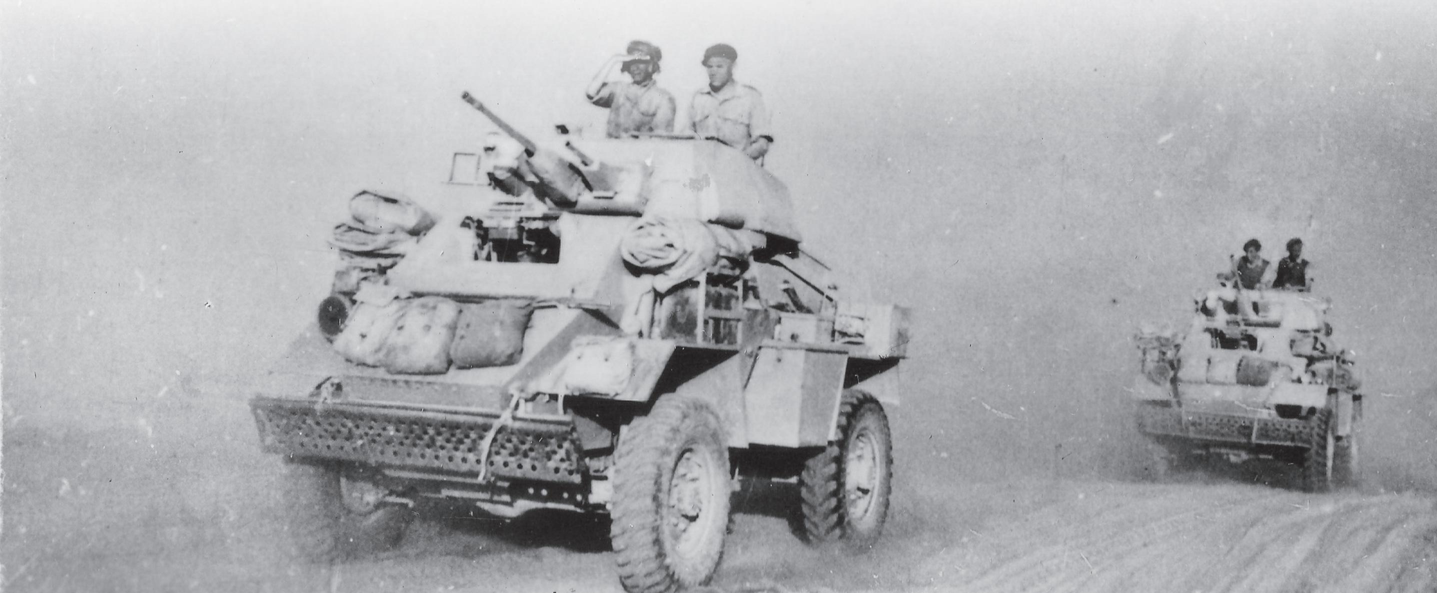




Crusader Mk I, 10th Armoured Division. The Mk I still had the useless machine-gun turret on the front slope, which was removed on the subsequent Crusader Mk II. (© Osprey Publishing Ltd by Peter Sarson. From NVG 14 *Crusader and Covenanter Cruiser Tanks 1939–45*)

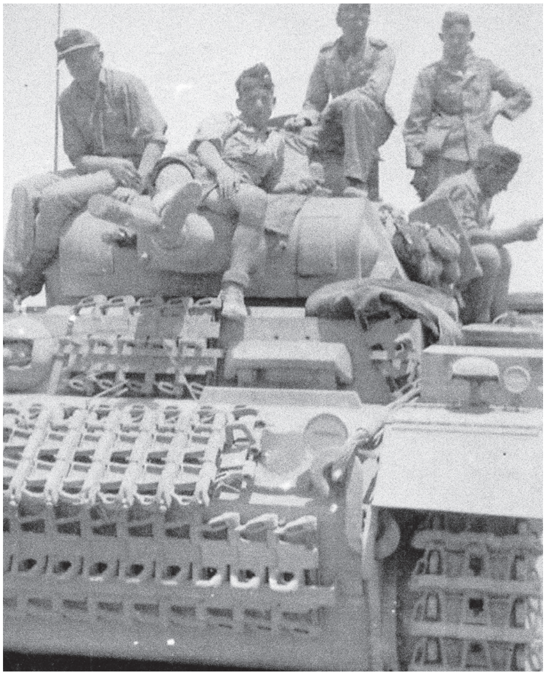
correcting design deficiencies in the Crusader, preparing new tanks for issue and repairing damaged/inoperative tanks. Due to a shortage of radio sets and intercom equipment, over 300 tanks were held back because they lacked the means to communicate. As a result, a large backlog of tanks accumulated in warehouses around Alexandria and Suez. By 25 May, the 8th Army had at least 849 tanks in the field around Gazala, including 167 Grants, 257 Crusaders, 149 Stuarts, 166 Valentines and 110 Matildas. By fielding five very different types of tanks in its armoured regiments, the RAOC support units were confronted with the daunting task of ensuring that the right fuel (different versions of the same tank might use either diesel or petrol), ammunition and spares went to the correct unit.

Humber Mk II armoured cars. The Humber was armed with one 15mm and one 7.92mm Besa machine-guns. Although not quite as well armed as the latest German armoured cars, the Humber was a vast improvement over the obsolescent British armoured cars used in 1940. (Battlefield Historian, BHC 01302)



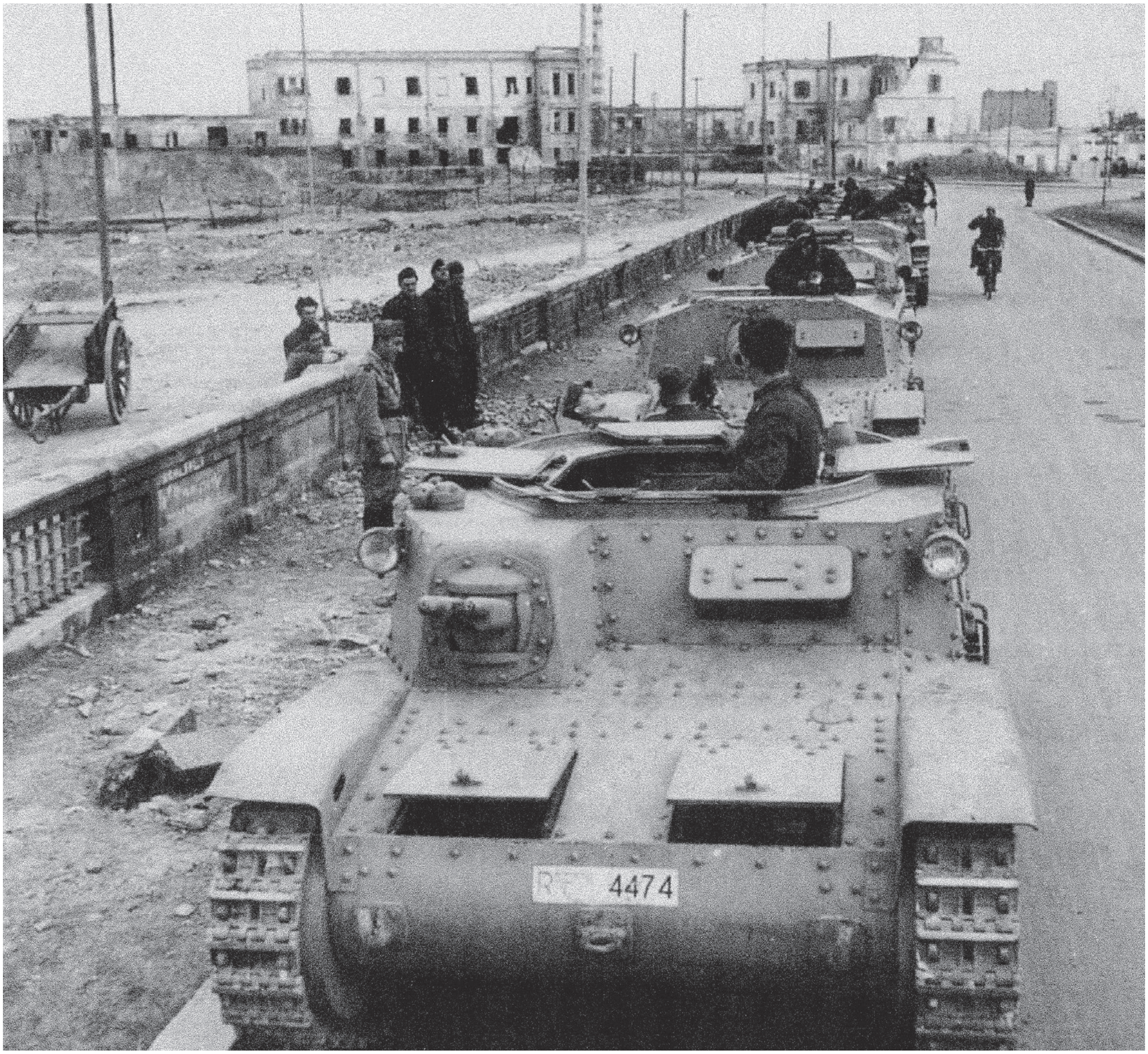
Despite the lack of 6-pounder-equipped tanks, the 8th Army did receive its first batch of towed 6-pounder (57mm) anti-tank guns in mid-February. Although initially only provided an AP round (the ballistic capped APC round would not be available until September), the 6-pounder proved to be a major improvement over the 2-pounder gun. Whereas the 2-pounder could only penetrate the FHA of German tanks at point-blank range, the 6-pounder could penetrate the frontal armour of the latest Pz III tanks at ranges up to 800 metres. By mid-May 1942, the 8th Army had a total of 80 6-pounders anti-tank guns, which were all assigned to the anti-tank batteries in the 1st and 7th Armoured Divisions. Two more batteries were equipped with 6-pounder on 24–26 May, just before the Axis offensive began. The Commonwealth infantry units in XIII Corps would have to make do with the 2-pounder and even some captured enemy 5cm anti-tank guns.

On the opposite side of the Gazala line, Panzerarmee Afrika underwent an amazing recovery during February–April. Thanks to the reduced effectiveness of RAF and Royal Navy interdiction efforts against the sea line of communications from Italy to Tripoli, Axis forces in North Africa were able to receive a significant amount of equipment, personnel and supplies in February–May 1942. Altogether, the DAK received over 300 tanks, and by 25 May the two Panzer-Divisionen had been built up to a combined strength of 363 tanks (including 256 Pz III and 41 Pz IV). To put this number in perspective, in May 1942 there were only 1,167 operational German tanks on the entire Eastern Front, spread across 19 Panzer-Divisionen. In contrast to Rommel's two full-strength Panzer-Divisionen, one-third of the Panzer-Divisionen on the Eastern Front possessed only a single Panzer-Abteilung, and most were fortunate to have 100 operational tanks.[31] For what was supposed to be an economy of force effort in a secondary theatre of operations, the DAK received far more than its fair share of new equipment – in large part due to Rommel's public image and ability to work the Nazi hierarchy to his command's advantage.



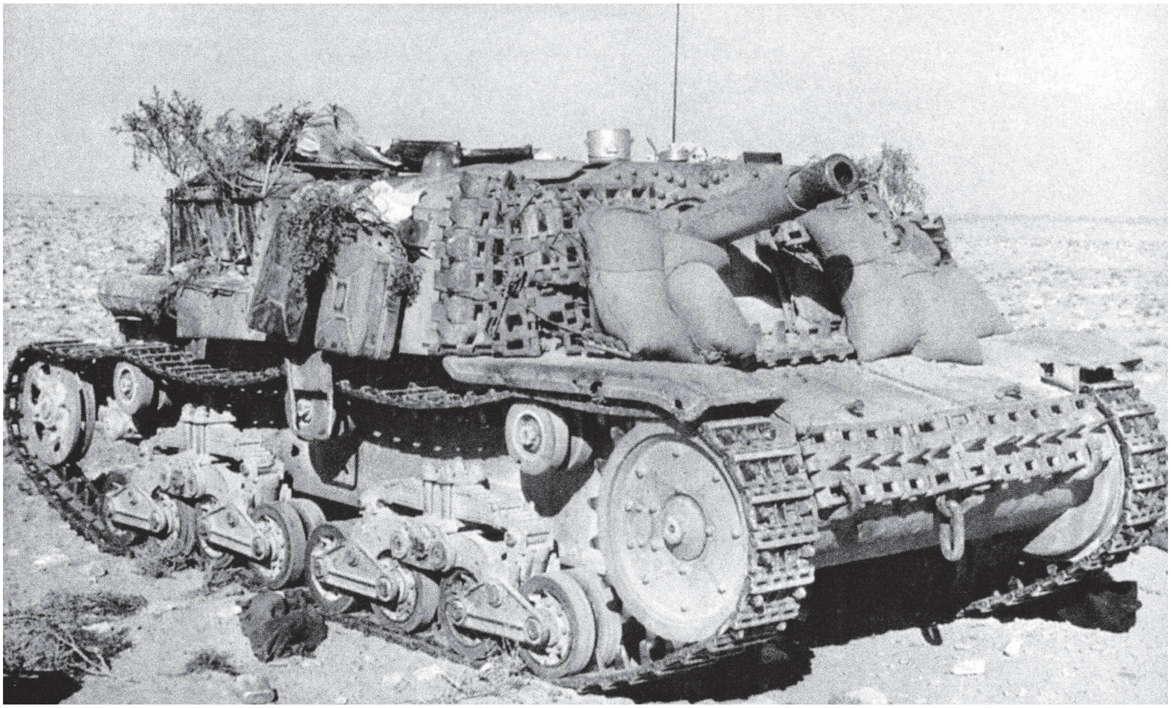
A relaxed-looking Pz III crew awaits the order to advance. Extra track has been attached to the front hull to increase protection. Given the 'clean' look of the tank and crew, this photo was likely taken during the quiet period just before the Battle of Gazala. (Author's Collection)

Rommel was also provided with improved tanks that would further challenge the 2-pounder-armed British tanks. The DAK received over 200 Pz III Ausf J, armed with the 5cm KwK 38 L/42 gun and protected by 5cm of FHA plate. On 10 February, the first batch of 15 upgraded Pz III Ausf J (which would be called Pz III 'Specials' by the British) equipped with the long 5cm KwK 39 L/60 gun arrived. By mid-May, 19 of the long-barrelled Pz III Ausf J were at the front and another 19 in Tripoli. The long KwK 39 gun did offer improved penetration at ranges up to 1,000 metres, but it still had difficulty defeating the thickly armoured Matilda unless it used the



In early 1942, the Italian forces in North Africa began receiving the carro commando M40, which was a turretless version of the M13/40 for use as a battalion commander's tank. Although few in number, the radio tanks were a key enabler for Italian commanders to coordinate large-scale armoured operations in North Africa. (Author's Collection)

Tungsten-core (HK or *Hartkern*) Panzergranate 40 APCR round. Typically, only about 8 per cent of the 5cm ammunition available for tanks and anti-tank guns in 1942 was APCR, with the balance being either Panzergranate AP-T or Panzergranate 39 APCBC-HE rounds. The DAK also received about 40 new Pz IV tanks, including some of the upgraded Ausf F model, which were protected by 50mm of FHA. In May, the first four Pz IV Ausf F tanks (which have been called the Ausf F2 model or Ausf G model) equipped with the KwK 40 L/43 arrived in North Africa, although they did not come with 7.5cm ammunition. Yet, once provided with an adequate stock of ammunition, the Pz IV 'specials' would possess greater long-range firepower than any other tank in North Africa, until the Tiger I arrived.



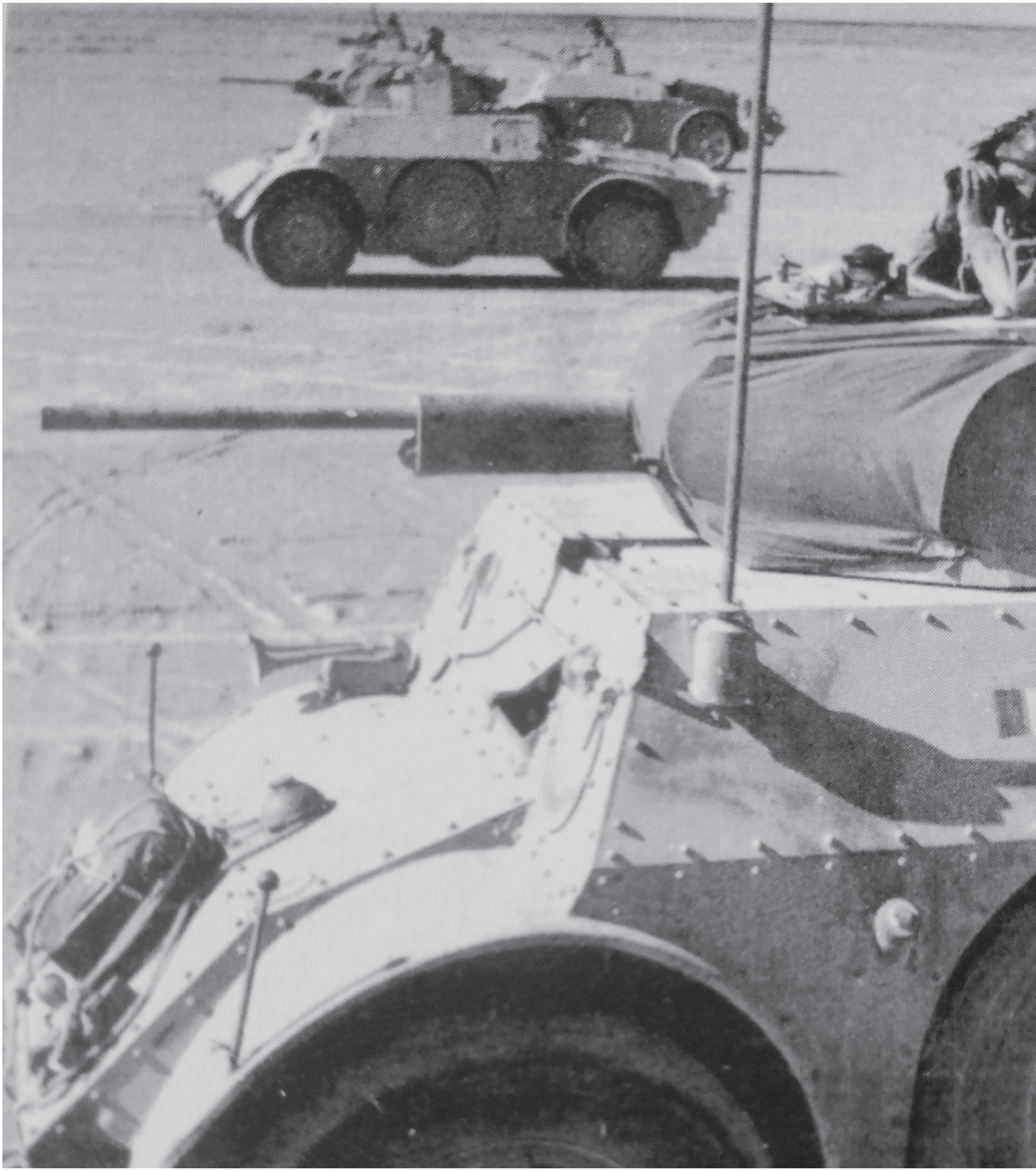
The first two batteries of Semovente da 75/18 self-propelled guns arrived in North Africa in January 1942. Designed primarily for infantry support, the Semovente did gain some anti-tank capability once EP rounds were introduced. (Author's Collection)

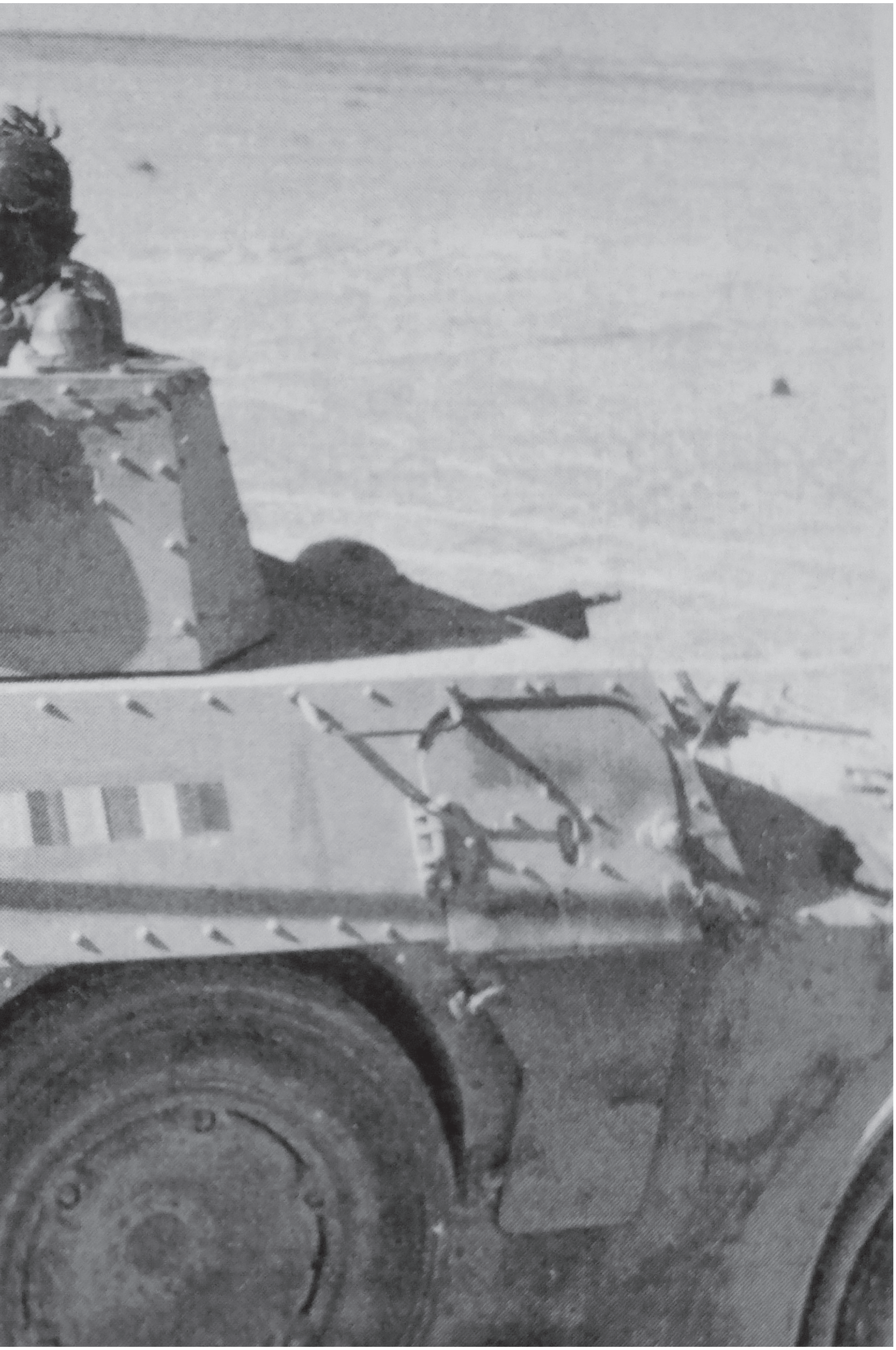
Rommel wanted more self-propelled artillery to support his assaults and the DAK received token quantities of some new and experimental types. The first to arrive were three StuG-III Ausf C/D assault guns mounting the short 7.5cm howitzers. In addition, 12 15cm sIG 33 auf Fahrgestell Panzerkampfwagen II (Sf) self-propelled guns were shipped to Tripoli by April. In Germany, it had been fairly easy to mount a 15cm infantry gun atop a surplus Pz II chassis and thereby create the new self-propelled guns. Once the vehicles arrived in North Africa, it was intended to form two batteries for the 90. leichte Afrika Division, but the Pz II chassis proved prone to breakdown carrying such a heavy load in the heat and dust of North Africa. Consequently, the new self-propelled 15cm guns spent more time in the workshop than they did in the field. Rommel also wanted to reduce his reliance on towed anti-tank guns and requested self-propelled tank destroyers that could keep up with his armour. As an interim solution, Panzerjäger-Abteilung 605 (sfl.) received nine Sd.Kfz 6/3 halftracks (the 'Diana') equipped with captured Russian 76.2mm Pak 36 (r) guns. Although this weapon mounted on a halftrack chassis was a bit awkward, the ex-Soviet gun proved to be an excellent tank killer, able to penetrate the frontal armour of Matilda tanks at 1,500 metres with armour-piercing capped rounds. However, the DAK's long-term solution for an improved tank destroyer was to be met by the Marder III (Sd. Kfz. 139), which was in final development. The Marder III consisted of the Pak 36 (r) mounted on the chassis of a Czech Pz38(t) light tank; a few samples of this AFV arrived in May, but it did not begin to arrive in quantity until July.

The Italian XX Corpo d'Armata (formerly the CAM) was also rebuilt in February–May 1942, using a mix of Italian, German and captured equipment. The 'Ariete' division was brought up to full strength with three battalions of M14/41 tanks, two armoured reconnaissance battalions (L6 light tanks and AB41 armoured cars) and two groups of Semovente da 75/18 self-propelled guns. The 'Trieste' division received one tank battalion and one armoured car unit, in an attempt to create a more capable motorized infantry formation. The XX Corpo d'Armata was also given considerable firepower to make up for the shortcomings of Italian tanks, including a battalion of German 8.8cm Flak guns and a battalion of Italian 90/53 guns. Altogether, the corps would be able to deploy 228 tanks in the next campaign, along with 78 armoured cars and 18 Semovente.[32] The 'Littorio' division was also in Libya, with about 80 tanks, but Superasi decided to keep it in reserve, since it was still not fully trained or equipped.

In early 1942, both the Germans and Italians had begun to deploy a new type of non-kinetic anti-armour munition to North Africa. The German version was a HEAT round (Gr 38 HI/B) that could be fired by the low-velocity 7.5cm L/42 howitzer on the Pz IVE tanks; the round could theoretically burn through 75mm of armour at ranges up to 1,000 metres. The Italians developed the Effetto Pronto round (EP), which was actually akin to a HESH (high-explosive squash head) round, rather than a HEAT round. Italian industry produced several versions of the EP rounds for the 47/32 anti-tank gun, the 75/27 field gun and the 100/17 howitzer. Firing tests of the EP rounds were conducted in Libya in March 1942 against an abandoned Crusader tank and produced positive results; at 550 metres, both the 75mm and 100mm EP rounds were able to burn through the 30mm frontal armour on the British tank.[33] The Semovente, built on the chassis of an M13/40 tank, was intended as an infantry support weapon, but once it received the EP rounds it gained a better tank-killing capability than the M14/41 tank. However, it is important to note that these types of rounds often required multiple hits to ensure a kill.

Panzerarmee Afrika also had a number of senior personnel changes in its armoured formations. Due to illness, Crüwell had returned to Germany on sick leave in March and was temporarily replaced as commander of the DAK by Generalleutnant Walter Nehring. Nehring was one of the most experienced armour commanders in the Wehrmacht, having been involved in pre-war doctrinal developments, then commanded first a Panzer-Regiment and then a Panzer-Division in Russia. All three German divisions in the DAK had new commanders: Generalmajor Gustav von Vaerst took over the 15. Panzer-Division and Generalmajor Georg von Bismarck took over the 21. Panzer-Division; both were experienced Prussian officers who had commanded motorized infantry brigades in the Polish and French campaigns. Both Panzer-Regiments also had new commanders, with Oberst Gerhard Müller taking over Panzer-Regiment 5 and Oberstleutnant Willi Teege taking





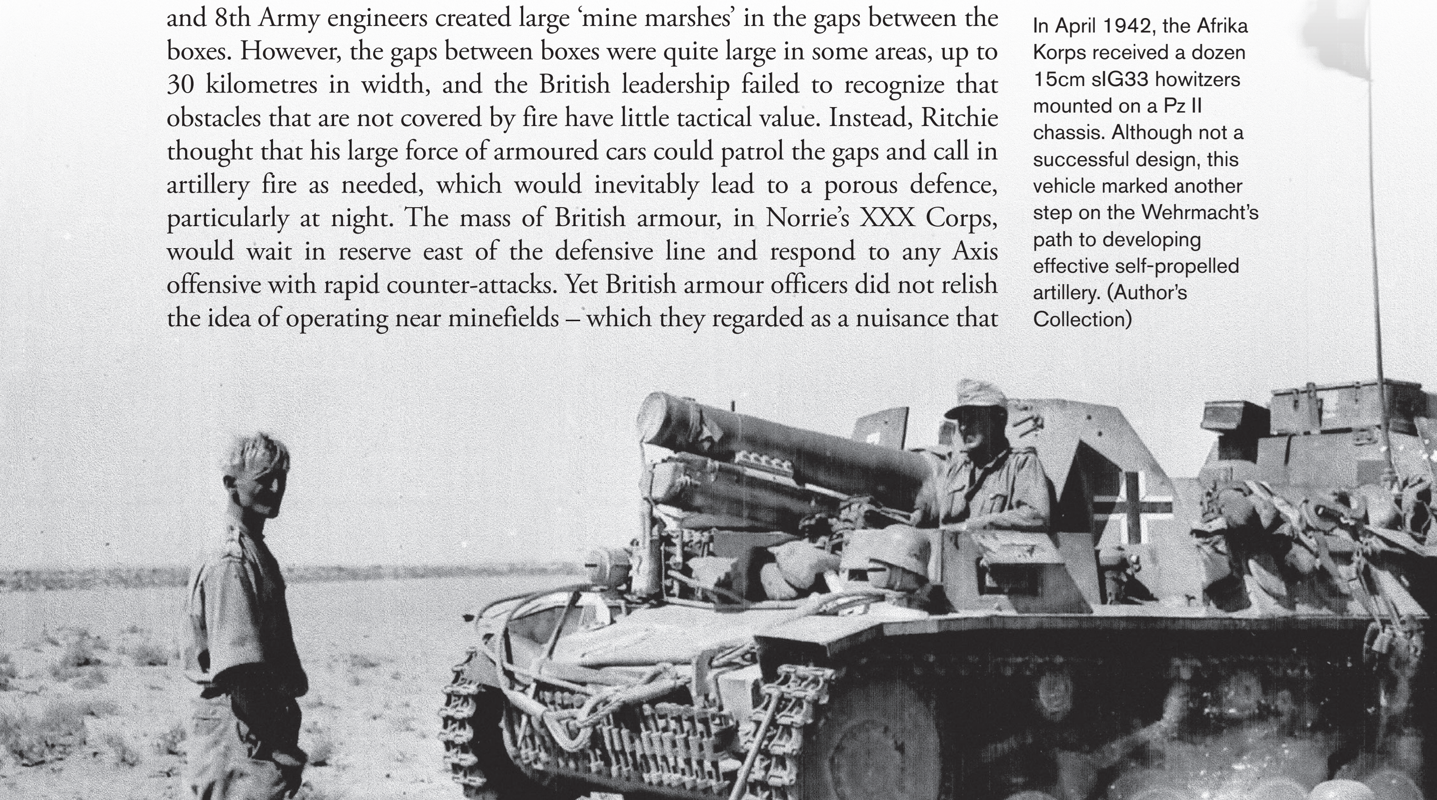
Italian reconnaissance units in North Africa began to receive the AB41 armoured car in mid-1941 and it equipped three squadrons by mid-1942. The 7.4-ton AB41 had the same turret as the L6 light tank, armed with a 20mm cannon. (Author's Collection) over Panzer-Regiment 8. Teege had been with the Panzer arm from the beginning, having been in the last group through the Panzerschule Kama in 1933.[34] By 1941, Teege was a veteran Panzer-Abteilung commander and had served under Nehring in Russia. Oberst Müller had spent most of the inter-war period in police service before being recalled to the Wehrmacht in 1935. Müller had briefly commanded a Panzer-Abteilung on the Eastern Front during the first weeks of Operation *Barbarossa*, but was badly wounded and lost his left arm. He spent the last six months of 1941 recovering in the Führer Reserve, but requested another combat assignment. Oberstleutnant von Wechmar, commander of the A.A. 3, had fallen ill and been sent back to Germany; he was replaced by Major Hans von Luck in April 1942.

Eager to regain the initiative in North Africa, Rommel had begun discussing a new offensive with Generalfeldmarschall Albert Kesselring (Oberbefehlshaber Süd, commander-in-chief south) in early April. Although Hitler's focus was on achieving a decisive success in Russia in 1942, he was willing to support a limited-objective offensive in North Africa to prevent the British from achieving any gains in the Mediterranean theatre. On 30 April, the German and Italian leadership met for a strategy conference at the Schloss Klessheim near Salzburg. Both Hitler and Mussolini agreed to an offensive in North Africa in late May, designated as *Unternehmen Theseus*, with the immediate objective of capturing Tobruk. Enough fuel and ammunition was available in Libya to support a 30-day operation (about 12,000 tons of fuel). However, Panzerarmee Afrika was not to advance beyond the Egyptian border until British-held Malta was taken by a joint air-sea operation, designated as *Unternehmen Herkules.*[35] While the resources available would only permit a short-duration offensive pulse, Rommel was confident that Panzerarmee Afrika could defeat the 8th Army and capture Tobruk in a lightning assault. He also hoped that Panzerarmee Afrika could capture enough British fuel at Tobruk to enable it to continue his advance into Egypt.

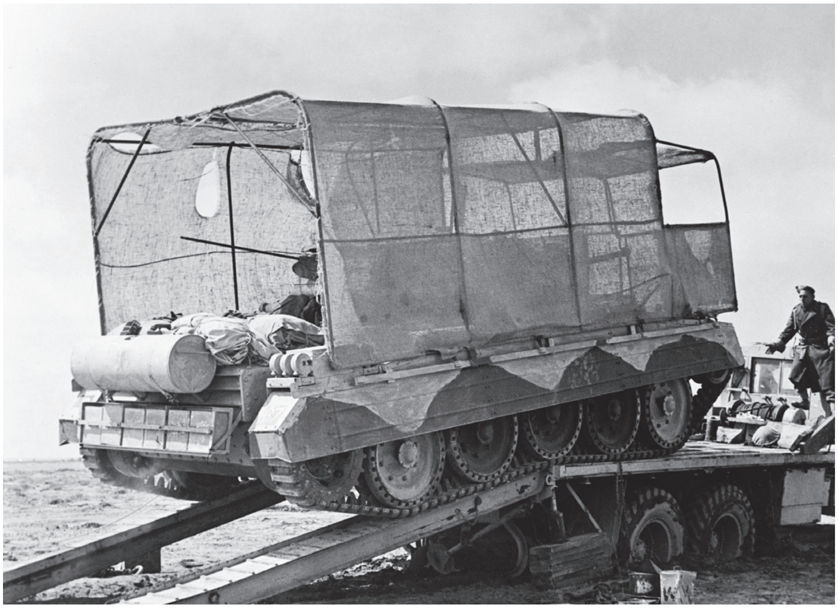
While Churchill pressed Auchinleck to resume the offensive before Rommel attacked, Auchinleck and Ritchie made only perfunctory plans for another attack. The rail line from Egypt was extended to near Belhamed, which greatly improved the British logistic situation, but Auchinleck was reluctant to risk another armoured melee with Rommel until he had a decisive edge. Instead, he informed Churchill that he would not even consider an offensive until 8th Army was better trained and enjoyed at least a 3:2 numerical superiority in tanks. At best, Auchinleck stated that he might be able to conduct a limited offensive by mid-June. In truth, both Auchinleck and Ritchie preferred to fight a defensive battle of attrition, in which their superior resources would enable them to stay in the fight until the Afrika Korps exhausted its own finite amount of ammunition and fuel. They were also aware that the US Army would likely be arriving in North Africa before the end of 1942, so any kind of delay worked to the Allied advantage. Another factor that fed a defensive mindset was the relative weakness of the Desert Air Force, which had suffered heavy losses that had not been fully replaced. As a result, by May 1942, the RAF only had about 190 operational aircraft (roughly 120 fighters, 40 light bombers, 30 reconnaissance) to support 8th Army, whereas Rommel could count on the support of nearly 500 Axis aircraft. Furthermore, the Desert Air Force's primary fighter was the American-made Kittyhawk (P-40D), which was inferior to the German Bf-109F fighter. Until the air balance improved, the 8th Army really could not consider an offensive.

Up to this point in the Desert War, the 8th Army had not really conducted a linear defensive battle. Instead, mobile delaying tactics had been employed to slow Axis offensives, with armour serving in the covering force role. However, the defence of the Gazala line was going to be vastly different from earlier operations. Ritchie's basic concept rested upon the creation of six brigade-size boxes by XIII Corps, protected by widespread mine barriers, to form a linear defensive line west of Tobruk. Another separate brigade box, to be held by the 1st Free French Brigade, was to hold the Bir Hakeim area, further south. Each brigade box was configured for all-around defence and was garrisoned by three infantry battalions, one artillery battalion (24 x 25-pounder), one anti-tank battery (12 x 2-pounder), one anti-aircraft battery (12 x 40mm) and a company of engineers; these would be very tough nuts to crack. Indeed, the British incorporated many of the lessons they had learned from the Axis frontier defensive positions into these boxes. However, even the armoured brigades were instructed to establish themselves in defensive boxes, which undermined their role as mobile strike units.

For the first time in the Desert War, the 8th Army employed anti-tank and anti-armour mines on a massive scale, deploying roughly one million between Gazala and Bir Hakeim. Each box was protected behind an extensive minefield and 8th Army engineers created large 'mine marshes' in the gaps between the boxes. However, the gaps between boxes were quite large in some areas, up to 30 kilometres in width, and the British leadership failed to recognize that obstacles that are not covered by fire have little tactical value. Instead, Ritchie thought that his large force of armoured cars could patrol the gaps and call in artillery fire as needed, which would inevitably lead to a porous defence, particularly at night. The mass of British armour, in Norrie's XXX Corps, would wait in reserve east of the defensive line and respond to any Axis offensive with rapid counter-attacks. Yet British armour officers did not relish the idea of operating near minefields – which they regarded as a nuisance that



In April 1942, the Afrika Korps received a dozen 15cm sIG33 howitzers mounted on a Pz II chassis. Although not a successful design, this vehicle marked another step on the Wehrmacht's path to developing effective self-propelled artillery. (Author's Collection)



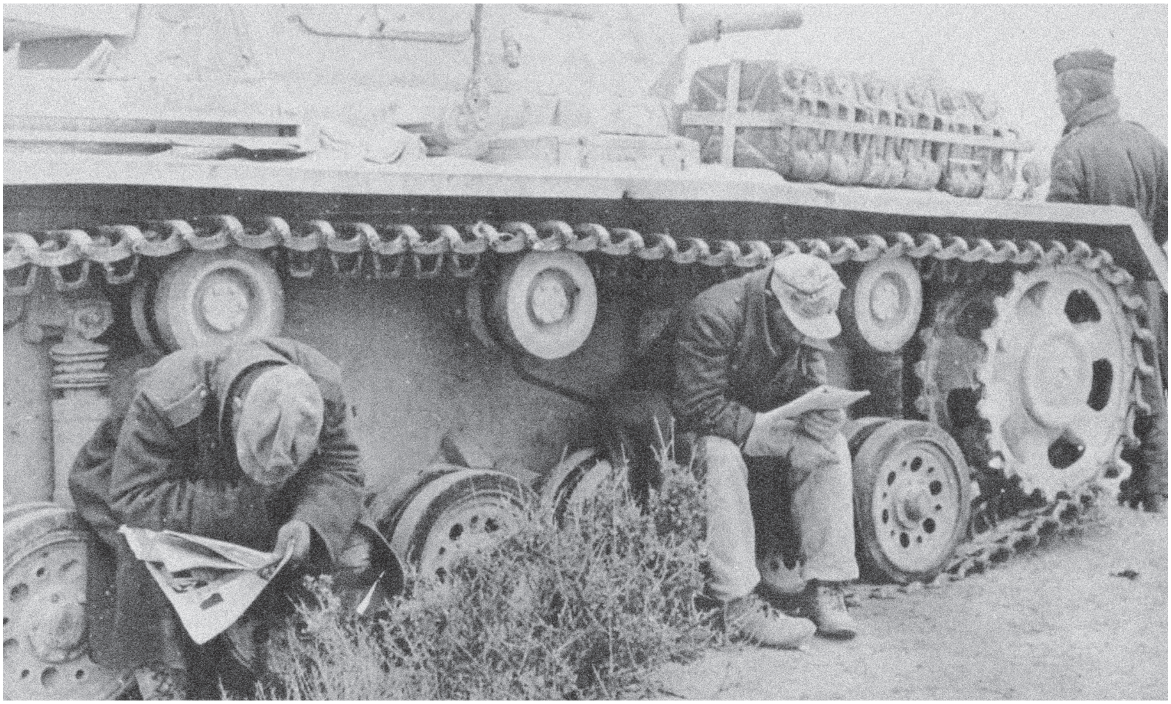
The 8th Army invested an inordinate amount of time into developing 'sun shields' for its tanks in order to deceive enemy air reconnaissance. There is no evidence that the deception was effective and tank crews were annoyed by these clumsy contraptions. (IWM, E9876)

cluttered up the battlefield – and preferred to keep their tanks further back. Lack of pre-war training with mine obstacles and engineers now left British armour leaders uncomfortable with the idea of operating in this kind of environment.

Auchinleck and his new senior intelligence officer (DMI), Brigadier Francis 'Freddie' de Guingand, were well aware that Rommel was planning an offensive, based upon Enigma intercepts, but they did not know when or where the blow would fall. De Guingand had no experience in intelligence work, nor combat experience, and was a 'political' officer who used associations with officers such as Eric Dorman-Smith and Bernard Montgomery to advance his own career; that Auchinleck would rely on the judgment of such a neophyte indicates more of the poor selection criteria used to fill key billets in the Middle East Command. Thus, the Middle East Command's intellingence assessments at this point were rather anodyne and of limited usefulness. Looking to his own intuition, Auchinleck assessed that Rommel's most likely course of action would be to attempt to smash through the centre of the line and then make straight for Tobruk, sort of like a mechanized version of Napoleon's plan at the Battle of Waterloo. Indeed, he thought this would be the most dangerous enemy course of action. Rather weirdly, Auchinleck actually went to the Gazala sector in April and conducted a personal reconnaissance in a command car along the Via Balbia.[36] Until the beginning of the Axis offensive, the Middle East Command assessed that the bulk of Rommel's armour was deployed near the coast, leaving only covering forces in the south. Thanks to Enigma intercepts, Auchinleck and de Guingand correctly assessed that the Axis offensive would begin in the last week of May, and 8th Army was put on alert.

Auchinleck and his staff did recognize that Rommel might opt for a second course of action by making a wide outflanking manoeuvre south of Bir Hakeim, but regarded this as more likely to be a feint to induce the British to withdraw forces from their centre.[37] Indeed, Auchinleck expected the Italian 'Ariete' division to be used in this role, so when Italian tanks were spotted in the south, this tended to reinforce that *a priori* assumption. Ritchie was advised by Auchinleck to deploy his armoured reserve to deal with either enemy course of action, but with the proviso that he must protect his centre at all costs. He decided to place his strongest mobile unit, Lumsden's 1st Armoured Division, to cover the centre, while Messervy's 7th Armoured Division was positioned to block any encircling move from the south. Ritchie was also directed to protect his line of communications, particularly the large fuel depot at Belhamed, which had over 4,200 tons of fuel stockpiled. Armed with this contradictory guidance – protect your centre, watch your flanks and guard your lines of communications – Ritchie and Norrie dispersed their armour reserve across a 30km-wide triangle of desert. Auchinleck's intent to employ the British armour in mass was undone by Ritchie's attempt to cover all eventualities, which would lead to another piece-meal commitment of brigades. Furthermore, deploying an armoured reserve at the right moment to influence the battle requires judicious timing, based upon accurate situational awareness, neither of which had been British strong suits during *Crusader*.

German Panzer crewmen find a convenient place to read, sitting on the roadwheels of their tank. Intense bursts of operational activity were often followed by periods of inactivity. Note the field jackets – the desert could be quite cold. (Author's Collection)



While preparing for *Unternehmen Theseus*, Rommel had a wealth of strategic intelligence about British operational plans, but very limited tactical intelligence on enemy strength and dispositions, particularly the British armoured reserve. In December 1941, the German OKW Cipher Branch (Chiffrierabteilung), with some help from the Italian SIM service, succeeded in breaking the American 'Black' code used by the US military attaché in Egypt, Colonel Bonner Fellers. By January 1942, Rommel was receiving regular decrypts of Fellers' message traffic back to Washington, which included detailed information about the British 8th Army. Thanks to this source of information, Rommel knew about Ritchie's plans for holding the Gazala line with fortified boxes and mines, as well as his preparations for a counter-offensive. In addition, Fellers provided details on the arrival of the M3 Grant/Lee tanks in Egypt, thereby alerting Rommel three months prior to their appearance in combat.[38] However, Rommel had very little information about the exact layout and strength of the British fortified positions; particularly the area around Bir Hakeim. Indeed, the British had won the counter-reconnaissance battle by preventing the DAK ground reconnaissance units from discovering the location of important minefields and defensive positions. Likewise, the Luftwaffe pre-battle reconnaissance failed to answer critical intelligence gaps about British dispositions. Rommel's preference was to fight a battle of manoeuvre rather than a costly breakthrough battle. Consequently, he decided to make a wide sweep around Bir Hakeim (under the assumption that it was not heavily defended) with almost the entire DAK and the Italian motorized XX Corpo d'Armata, while Crüwell conducted a feint attack against the Gazala line with four Italian infantry divisions and a German infantry brigade. Always the gambler, Rommel committed all his mechanized forces to the enveloping manoeuvre, leaving no mobile reserve in case anything went wrong. Furthermore, he made another dangerous assumption in thinking that the Allied defensive boxes would not be too difficult to overcome. As a result, he assigned the Italians to eliminate the Free French Brigade in the Bir Hakeim, expecting a quick *coup de main*.

Once around the Gazala line, Rommel developed only a very basic scheme of manoeuvre. The bulk of the DAK's Panzer force would sweep north behind the Gazala line and defeat Norrie's armour in a swirling meeting engagement. At the same time, the 90. leichte Afrika Division, which was little more than a motorized brigade, would push north toward El Adem and Acroma, thereby isolating the XIII Corps. Essentially, Rommel reckoned that a bold enveloping manoeuvre would completely disrupt the British defence, leading to the rapid fall of Tobruk. While Ritchie's plan to fight a defensive battle at Gazala was unimaginative and timidly executed, Rommel's concept for *Theseus* was quite superficial, based on dangerous assumptions and aggressively conducted with little regard for unexpected outcomes.

CHAPTER 2:
THE ROAD TO SUEZ

GAZALA: THE CLASH OF ARMOUR, MAY 1942

> *'The whole bloody Afrika Korps is drawn up in front of us like a bloody review.'*
>
> *Brigadier Anthony Filose, 3rd Indian Motor Brigade, 26 May 1942*[1]

> *'The advent of the new American tank has torn great holes in our ranks.'*
>
> *Rommel*[2]

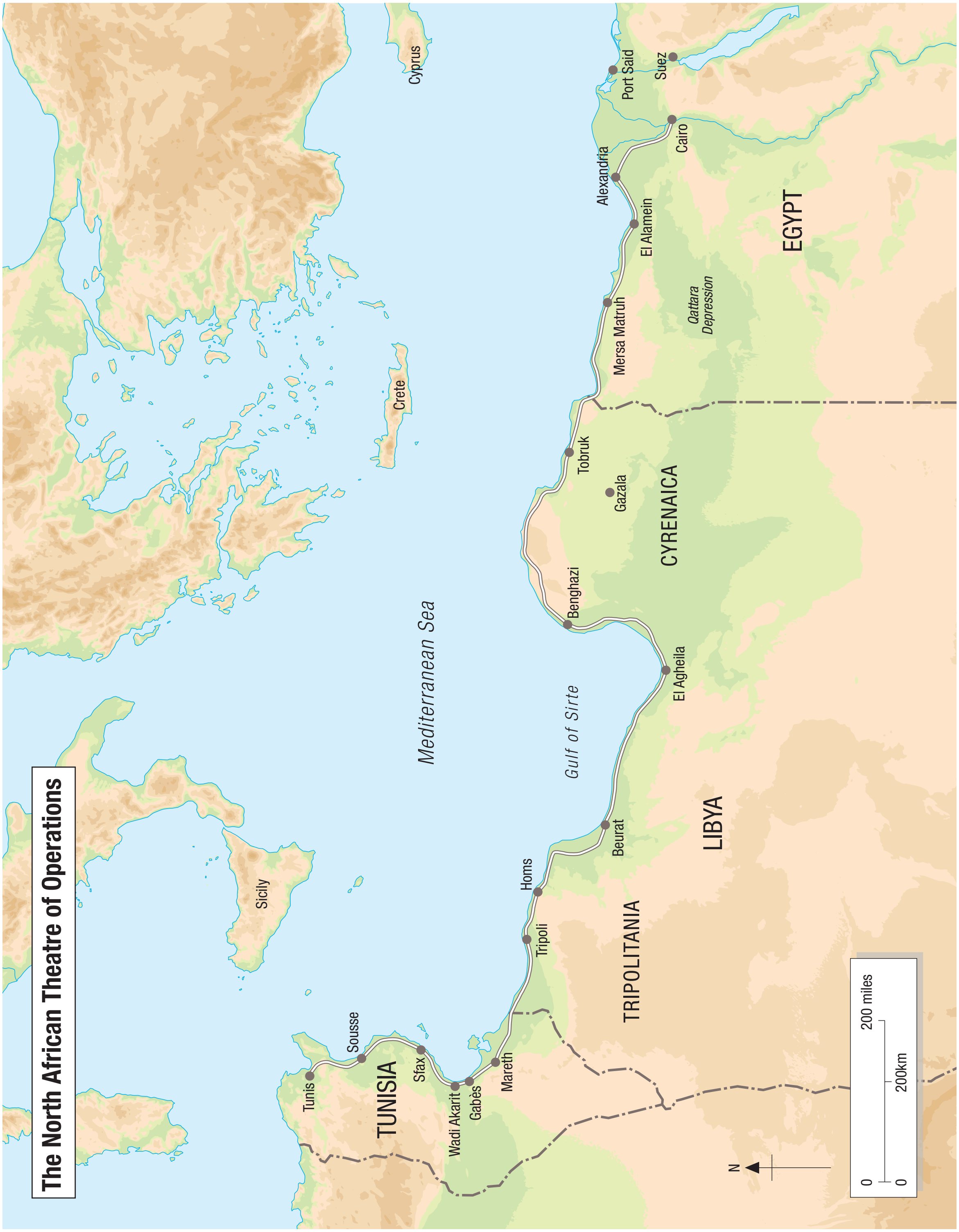
Ludwig Crüwell returned from sick leave in Germany just 24 hours prior to the beginning of *Unternehmen Theseus* to find that his role as commander of the DAK had already been subsumed by Nehring. Adding to his mental anguish, Crüwell's wife had died just before he left Germany. During Operation *Crusader*, Rommel had clashed repeatedly with Crüwell and he was not keen to work with him again. Instead, Rommel put Crüwell in charge of his deception effort, set to begin at 1400 hours on X-Tag, 26 May. The main intent of the feint attack by Gruppe Crüwell was to convince Ritchie that Panzerarmee Afrika was committing its main effort against the northern and central sectors of the Gazala line. Yet the feint attack proved to be a half-hearted effort that made little impression on Ritchie. Crüwell was provided with the X Battaglione Carri Medi (X Btgl. Carri M.) and one armoured car squadron

A squadron of Grant tanks advancing during the Battle of Gazala. Each British armoured regiment was given one or two squadrons of Grant tanks. (Battlefield Historian, BHC 01251)

from the 'Ariete' division, the II./Pz. Regt 5, and a few other assorted German vehicle detachments in an attempt to simulate a large armoured force. The XIII Corps had assigned two South African reconnaissance regiments (4 SAACR, 6 SAACR) and the 3rd South African Reconnaissance Battalion with a total of over 150 armoured cars as a covering force.[3] Gruppe Crüwell began its feint attacks at 1400 hours, supported by an artillery bombardment and Luftwaffe bombing of Allied forward positions. A few tentative probes were made against the South Africans in the north, resulting in the loss of three Italian M13/40 tanks and two German Pz IIs, but Allied losses were minimal. The fact that Italo-German forces made no serious effort to breach the defensive mine belts or to assault any positions left the defenders unimpressed. Once dusk arrived, all aggressive action ceased and the Axis armoured units withdrew. Consequently, the Axis feint attack failed in its objective and had no effect on Ritchie's dispositions.

At 2030 hours, Panzerarmee Afrika sent out the code signal 'Venezia', which set the entire DAK and Italian XX Corps in motion toward the south, the so-called *Flächenmarsch* (area march). Prior to the march, advance detachments had placed lights in used fuel cans to mark the route.[4] The great Axis formation, which comprised about 8,000 vehicles, moved with the Italian corps on the left of the arc, the two DAK Panzer-Divisionen in the middle. Generalmajor Ulrich Kleeman's 90. leichte Afrika Division, on the outer right flank, was assigned the key task of reaching El Adem by 0830 hours the next morning. Each Panzer-Division formation was roughly 3 kilometres wide and 5 kilometres long. Armoured cars from the 4 SAACR and KDG were able to observe a good portion of this movement from a distance of about 3,000 metres and report back to the XXX Corps headquarters; during the course of the evening, the armoured cars sent a total of 52 reports and correctly assessed that

Armoured cars from the 4th South African Armoured Car Regiment (SAACR) under enemy artillery fire during the early stages of the Battle of Gazala. The 4 SAACR was highly skilled in conducting screening missions. (Author's Collection)



The North African Theatre of Operations

Sicily
Crete
Cyprus
Mediterranean Sea
Gulf of Sirte
Tunis
Sousse
Sfax
Wadi Akarit
Gabès
Mareth
TUNISIA
Tripoli
Homs
Beurat
TRIPOLITANIA
LIBYA
El Agheila
Benghazi
CYRENAICA
Gazala
Tobruk
Mersa Matruh
Qattara Depression
El Alamein
Alexandria
Cairo
Port Said
Suez
EGYPT
N
0
200 miles
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200km

the enemy formation was at least one Panzer-Division.[5] Yet Norrie, who was woken by a staff officer, was not sure of what to make of these reports. Was this a feint? Messervy, 7th Armoured Division commander, thought it was a feint and managed to convince Norrie, who decided not to alert Lumsden's 1st Armoured Division.[6] Even worse, the two armoured divisions in XXX Corps had not been ordered to maintain a continuous radio watch during the night, which meant they remained unaware of the changing situation until early the next morning.

Along the way, the 'Trieste' division veered off to the left, based on missed communications and misorientation during a sandstorm. Originally, Generale Baldassare's XX Corps had been ordered to breach the minefields north of Bir Hakeim to create a supply corridor for the DAK, once it arrived behind the Gazala line. However, Rommel had decided to concentrate XX Corps against Bir Hakeim first, which led to confusion – once again, German *Auftragstaktik* methods undermined close cooperation with their Italian allies. Instead of following the 'Ariete' division, the 'Trieste' division bumped into a large mined area north-west of Bir Hakeim, leading to further chaos. Apparently Baldassare did not notice that one of his two divisions had gone astray and no immediate effort was made to correct this mistake.[7]

Gruppe Rommel moved at a slow but steady rate, covering about 55 kilometres in the next 5½ hours. Around 0230 hours, the DAK paused about 15 kilometres south of Bir Hakeim in order to top off fuel tanks and allow the troops two hours to eat and rest. Luftwaffe aircraft had been dropping flares over Bir Hakeim all night, which assisted Gruppe Rommel's navigation. At dawn (0420 hours), the advance resumed, pivoting to the north/north-east to get behind the Bir Hakeim box. Rommel hoped to outflank the British line but he actually had very little idea what was in front of his forces. Von Mellenthin's intelligence estimate was very sketchy in this sector and proved unreliable. Indeed, Rommel made a serious error in not sending a small reconnaissance unit to check out this axis of advance for unexpected minefields or enemy units at least one or two nights prior to the main attack. He exacerbated this error by committing virtually his entire mechanized force to this attack, leaving no appreciable reserves with Crüwell. In modern parlance, Rommel was 'leading with his face', which is not advisable in high-stakes mechanized operations.

A French 75mm gun crew in action at Bir Hakeim. The French artillery managed to repulse a hasty attack by the Italian 'Ariete' division, but Ritchie failed to adequately support this key position. (Author's Collection)

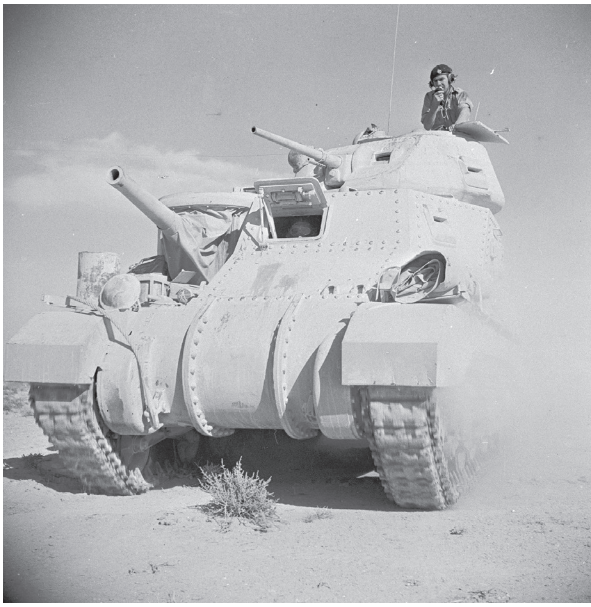
Norrie hesitated until 0330 hours, when he finally issued an alert to the 4th Armoured Brigade to be ready to move southward. All three armoured regiments in the brigade conducted a stand-to prior to dawn, with tanks manned and ready to move – but no further orders came for the next 3½ hours. Crews dozed off or began to eat breakfast. Meanwhile, Rommel had ordered Baldassare's XX Corps to attack the Bir Hakeim box to prevent the French brigade from interfering with the great wheeling movement. The 'Ariete' division, moving on the extreme left of the Axis formation, pulled off to the left of the main formation but suddenly encountered a significant Allied unit about 7 kilometres southeast of Bir Hakeim: Brigadier Anthony Filose's 3rd Indian Motor Brigade Group. Five days prior, Messervy had ordered this brigade (which was attached to 7th Armoured Division) to establish a defensive position at Point 171, south of Bir Hakeim. Messervy promised Brigadier Filose armour support from 7th Armoured Division if enemy armour appeared. At dawn on 27 May, the Indian brigade had established a perimeter but had not dug trenches or laid mines yet. Even worse, half its anti-tank guns had not arrived. Around 0600 hours, the lead elements of the 'Ariete' division spotted the Indian brigade and were soon fired upon by the attached 25-pounder field regiment. Generale de Stefanis, commander of the 'Ariete' division, assumed that this position was the Bir Hakeim box and he ordered Tenente Colonnello Enrico Maretti to conduct a hasty assault with all three tank battalions of his 132° Reggimento Carri. The Italian motorized infantry was kept back, in order to avoid the kind of casualties the Germans suffered in their charge at Sidi Rezegh.

Maretti attacked at 0710 hours in 'two-up, one-back' fashion, with the veteran VIII and IX Btgl. Carri M. in the lead, followed by the X Btgl. Carri M. The division artillery supported the attack, including the Semovente self-propelled guns.[8] The Indian brigade put up a fierce defensive fire from its 2-pounder anti-tank batteries and 25-pounder guns, which knocked out many of the advancing Italian tanks. Filose sent an urgent request for armour support to Messervy, but by then it was too late. The lack of a protective minefield doomed the Indian brigade, enabling the waves of Italian tanks to overrun the west side of the position. Once Italian tanks penetrated the perimeter, many Indian troops surrendered and others fled. The two lead Italian tank battalions pushed on through the box, emerging on the other side, and then continued on. During the interval between this breakthrough and the arrival of the third tank battalion and truck-mounted Bersaglieri, about two-thirds of the Indian brigade escaped, some heading toward Bir Hakeim. For the first time in the Second World War, Italian armoured units had won a significant offensive tactical victory and without any help from their German allies. The 3rd Indian Motor Brigade Group was thoroughly dispersed, suffering 211 dead and 1,030 captured, along with the loss of much of their equipment. The 'Ariete' lost 25 medium tanks in the assault (including 23 burnt out), and personnel losses were 36 dead or missing and 40 wounded.[9] Furthermore, the 'Ariete' barely paused after overrunning the Indian brigade before continuing on north to attack the Bir Hakeim box.

Around 0800 hours, the French defenders in Bir Hakeim spotted a large force of armour approaching from the south and the French opened fire with their 75mm artillery. Unlike the Indian brigade, the French position at Bir Hakeim was surrounded by 50,000 mines and the troops were well dug in – although the Axis were as yet unaware of this fact. Having crushed the Indian brigade so quickly, Tenente Colonnello Pasquale Prestisimone, commander of the IX Btgl. Carri M., apparently thought he could repeat this success. Prestisimone had no previous experience with armour or desert warfare and had come over from the frontier guards (Guardia alla Frontiera); he should not have been commanding a tank battalion. On his own initiative (he was out of radio contact with the regimental commander), around 0900 hours he ordered his battalion and one company from the X Btgl. Carri M. to attack the eastern side of the French box. Prestisimone impetuously ordered the attack without infantry and artillery support, or any prior reconnaissance. About 50 Italian tanks began the assault, but 18 were disabled by mines and others by anti-tank fire. Nevertheless, six Italian tanks managed to penetrate into the box. However, the veteran French troops did not panic, but quickly engaged this tank group with 40mm anti-aircraft guns and 75mm guns at point-blank range, eliminating all of them. As often happens, much of the damage in war is inflicted by a few steady soldiers, and in this case, one French 75mm gun crew was responsible for knocking out seven Italian tanks. The remainder of the Italian tanks pulled back, but Prestisimone ordered a second, smaller attack, which was also repulsed; Prestisimone's tank was knocked out and he was captured. Altogether, the 132º Reggimento Carri had lost another 31 tanks and one Semovente knocked out and suffered 185 casualties, including 87 taken prisoner.[10] The Italian 'Ariete' division withdrew, having lost one-third of its armour on the first day of the offensive.

The message that 3rd Indian Motor Brigade Group was under attack finally stung Norrie into action; he ordered Messervy to commit the 4th Armoured Brigade to counter the enemy armoured thrust. At 0720 hours, the signal 'MAJORITY' was sent to Brigadier Richards to commence moving his brigade toward an assembly area near Bir Hakeim. Yet rather than moving with all three armoured regiments in coordinated fashion, the regiments left their night leaguers individually and intended to assemble 14 kilometres to the south-west. The brigade was supposed to move in a broad wedge, with 5 RTR on the western flank, 3 RTR in the middle and 8th Hussars in the east, but the units were too far apart to see each other. Indeed, the units moved out of their leaguers in a somewhat leisurely fashion, rather than fully prepared for action.

The 8th Army's senior leadership during the Battle of Gazala consistently misused their armour. From left to right: Lieutenant General Norrie (XXX Corps), Lieutenant General Ritchie (8th Army) with pipe, and Lieutenant General Gott (XIII Corps). (Author's Collection)



A Grant tank in Libya, 18 June 1942. In Egypt, the Grants were outfitted with sand shields on the tracks and a canvas covering to keep sand out of the 75mm gun embrasure. (IWM, E13533)

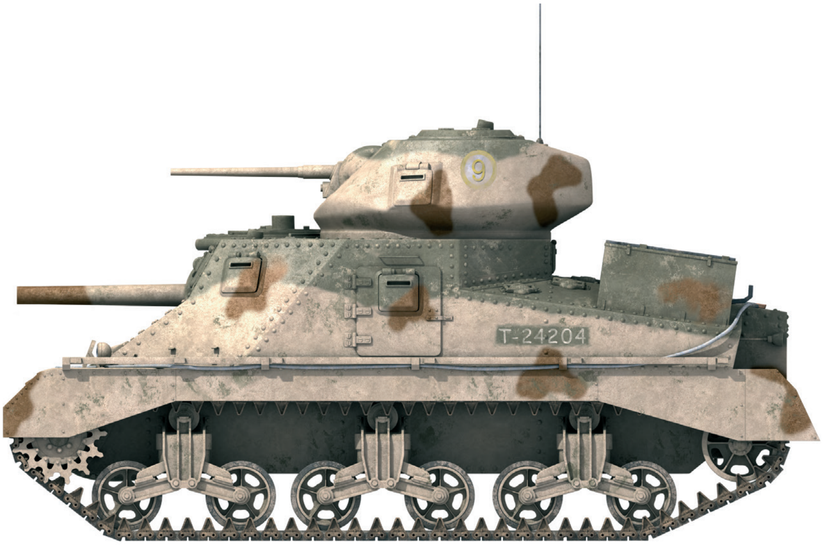
Lieutenant Colonel Gerald P. Kilkelly's 8th Hussars was in the lead and just ten minutes after leaving its leaguer, it spotted a large group of tanks approaching from the south at a distance of 3,000 metres. It was Hauptmann Johannes Kümmel's I./Pz. Regt. 8, in *Breitkeil* formation, the spearhead of the 15. Panzer-Division. Amazingly, neither side had any reconnaissance elements screening to their fronts, so it became a classic meeting engagement. Major John W. Hackett, commanding C Squadron, immediately deployed his Stuarts on the line. Kümmel, apparently seeing that the enemy armour was just Stuart light tanks, ordered his battalion to attack at once. For a few minutes, the German Pz III tanks had the advantage and Hackett's tank was knocked out. Then the rest of 8th Hussars arrived, with the Grants of A and B Squadrons deploying on either side of the hard-pressed C Squadron. Now it was time for the Germans to be surprised, as the Grants opened fire with their 75mm guns. Kümmel's tanks started to take losses, and even worse, he could see that their 5cm rounds had little or no effect on the Grant tanks' frontal armour, which were at least 1,000–1,200 metres distant. Kümmel had two of the new Pz IV Ausf F2 tanks in his battalion, but since they had only been provided with HE ammunition, they were of no use against the Grants. Kümmel was also unable to get artillery support, since the battalion assigned to support his advance had fallen behind. Making matters worse, another British armoured formation, Lieutenant Colonel George P. Roberts' 3 RTR, was coming up to support the 8th Hussars.

Seeing Kümmel's predicament, Oberstleutnant Willi Teege, commander of Panzer-Regiment 8, ordered Hauptmann Wolfgang Wahl's II./Pz. Regt. 8 to outflank the 8th Hussars to the east. The 8. Kompanie managed to manoeuvre and engage Major James D. Harbord's A Squadron from the flank, knocking out ten of his 12 Grants. Teege apparently brought up a battery of 8.8cm Flak guns; the Grants managed to knock out one gun, but the Grants of B Squadron were methodically picked off. By 0850 hours, the 8th Hussars had been smashed (having lost 22 Grants and ten Stuarts) and Kilkelly opted to withdraw with his few remaining tanks. Many of the 8th Hussars' surviving tank crews fled on foot. The 3 RTR fought longer, but the results were similar. Most of the action was fought at ranges of 1,000–1,200 metres and aside from a single artillery battery on either side, it was almost a tank-pure engagement. Although the Grants inflicted considerable damage on Pz.Regt. 8, the German tanks used manoeuvre to counteract the British edge in firepower. Second Lieutenant Bill Close, a troop leader in A Squadron, noted that 'a number of enemy panzers had crept closer, almost unseen in the murk and dust'.[11] Major Cyril Jolly, who commanded C Squadron, noted 25 hits on his Grant and his periscope was smashed. Roberts' tank was hit and put out of action and he was forced to order a withdrawal after losing nine of his 19 Grants and five Stuarts.

The 8th Hussars were also running out of ammunition; the small ammunition supply on the Grant – just 50 rounds of 75mm, half of which was HE – was quickly exhausted in combat. While the Pz IIIs had been outclassed to some extent by the Grants, the small number of 8.8cm Flak guns involved in the action had compensated. About half of Teege's tanks were damaged or out of action, but as soon as the British armour withdrew, he pushed on and overran their leaguers, capturing some of the B-echelon troops who were still there. Meanwhile, Uniacke's 5 RTR briefly skirmished with Pz.Regt. 5 of the 21. Panzer-Division around 1000 hours and used its Grants to inflict some long-range damage, including hitting the command vehicle of Oberstleutnant Martin, commander of the II./Pz. Regt. 5 (he died of his wounds).[12] Once Uniacke learned that the rest of the brigade had withdrawn toward El Adem, he also fell back, without losing a single tank.[13]

The German Panzer crews were certainly surprised by the appearance of the Grant tank on the battlefield (although it was less of a surprise than encountering the Soviet T-34 and KV-1 tanks in June 1941) – which many accounts mention – yet few comment on the fact that four squadrons of British Grants were nearly annihilated in their first action. Indeed, this was the first tank versus tank battle in North Africa where the British had been defeated so quickly. What happened? Despite the long range and 'punch' of the 75mm AP shells, it is clear that the German tankers managed to achieve firepower superiority through a higher volume of fire and that their gunnery was probably more accurate. British gunnery skills with the 75mm were still fairly basic, in part due to limited training and limited ammunition (the M72 AP-T round was still in short supply in early 1942). In the 8th Hussars, crews went through several days of gunnery on the Grants in early April and two days in May, firing at old barrels in the sand. Anecdotal accounts suggest that a few veteran crews achieved proficiency on the new weapon, but it was

Stuart light tanks of the 8th King's Royal Irish Hussars advance at speed across the desert. The Stuart remained a large component of the 8th Army's armoured strength throughout much of 1942, but was increasingly used for reconnaissance. (Battlefield Historian, BHC 01270)



A Grant medium tank, assigned to 3 RTR during the Battle of Gazala 1942. The light stone, olive green and brown camouflage pattern could not conceal that it was over 3 metres in height. (© Osprey Publishing Ltd by Hugh Johnson. From NVG 113 *M3 Lee/Grant Medium Tank 1941–45*)

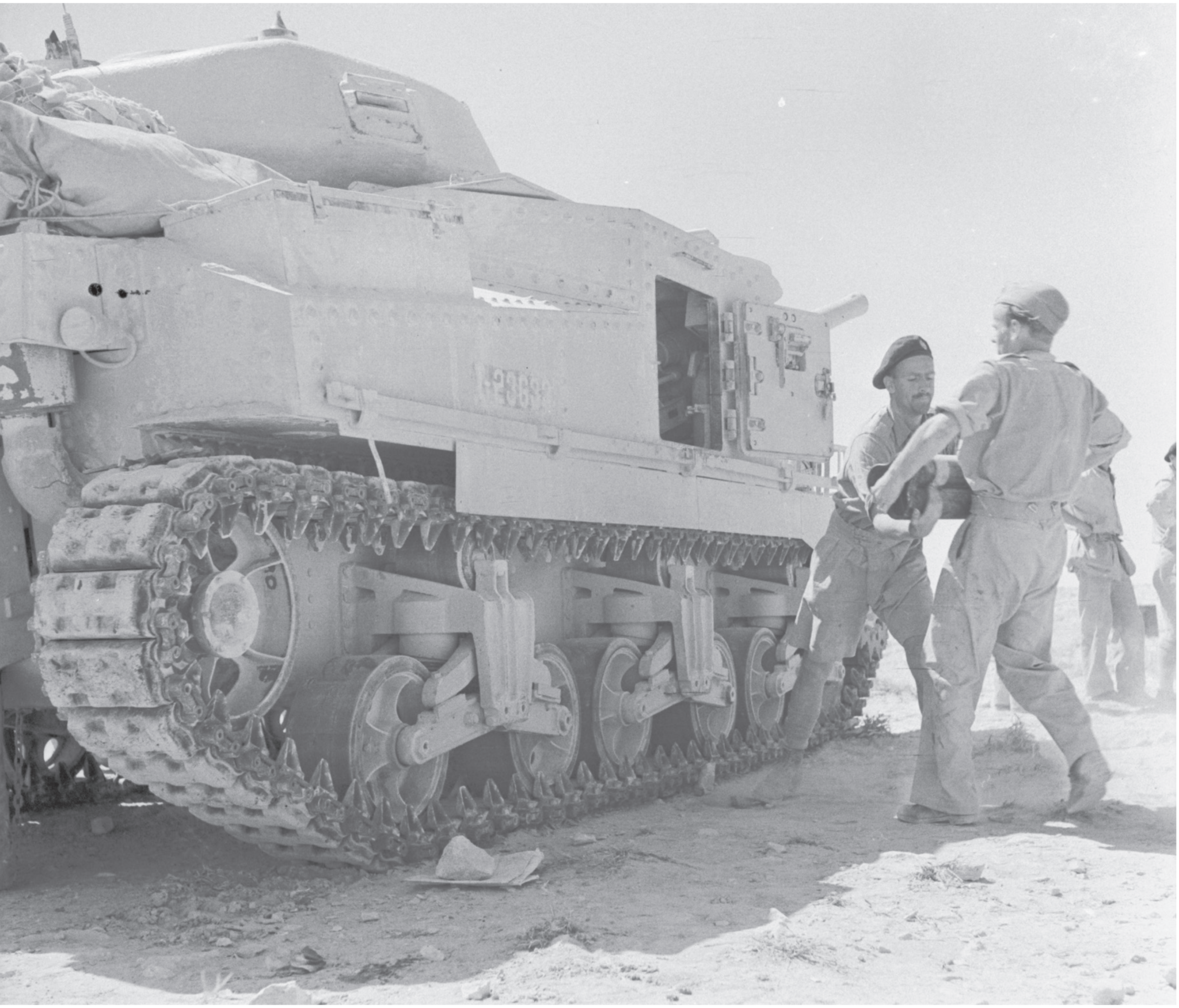
common for new gunners to fire over their targets, which meant that it took several rounds to adjust. Another factor that undermined British gunnery on the Grant was the lack of proper fire controls on the first batch of Grants to reach the Middle East.[14] One Grant crewman mentioned that the hand triggers were unreliable due to problems with the solenoid switches.[15] In contrast, the Pz III tanks had well-tested, reliable and accurate gunnery controls. Another factor that led to a British tactical defeat was that the 8th Hussars and 3 RTR chose to fight a static battle, whereas the German tanks manoeuvred to get into better firing positions. The Grant tanks proved vulnerable when flanked; the 3-metre-high Grant was difficult to conceal and its side armor was only 30mm, which could be penetrated by 5cm PzGr. 39 capped rounds out to 1,000 metres. Furthermore, with its 75mm gun mounted in its right-side sponson, the Grant could only respond to attack from its left by turning the entire vehicle.

While the Panzers were engaged in fierce battle, Kleeman's 90. leichte Afrika Division was enjoying great success on the extreme right flank. Kleeman's 'division' was really just a reinforced regiment-size motorized *Kampfgruppe*, although Rommel had provided him with two reconnaissance battalions and a Panzerjäger-Abteilung. Messervy had unwisely decided to split the 7th Armoured Division, with Colonel James Renton's 7th Motor Brigade Group located 12 kilometres south of the 4th Armoured Brigade group. Renton had been instructed to form a defensive position at Retma with part of his brigade, while sending the other part out in Jock columns as a screening force south of Bir Hakeim. Kleeman's armoured car group, led by Major Hans von Luck's A.A. 3, initially made contact with one of the Jock columns around 0730 hours and sent it packing, then stumbled onto the position at Retma. The 289th (Rhodesian) Anti-Battery, equipped with the new 6-pounder guns, was stationed at Retma and they opened fire on the German armoured vehicles at 1,200 metres. According to the Rhodesians, they knocked out three German tanks in the action, although it is possible they were actually armoured cars. Despite the Rhodesian anti-tank fire, the Retma position lacked defences or mines and was overrun by 0845 hours. The Rhodesian anti-tank battery covered the 7th Motor Brigade's retreat, but suffered over 50 casualties.[16] Kleeman then pushed on and overran a surprised cluster of British vehicles near Bir Beuid around 1000 hours, which turned out to be the forward headquarters of the 7th Armoured Division. Unlike Rommel, who was well protected by his *Kampfstaffel*, the British had still not learned to provide suitable security units for their armoured division headquarters. Messervy and his staff were captured, along with their vital division-level radios and code books. While Messervy was able to escape later, Ritchie was unaware of Messervy's capture for 12 hours and the 7th Armoured Division was without leadership for the first 48 hours of the battle.[17]

Norrie's XXX Corps headquarters was only vaguely aware that something was happening to the south, due to the paucity of reporting coming from forward units. He ordered Lumsden to place 1st Armoured Division on alert and be prepared to move, but the two armoured brigades remained in place until the 22nd Armoured Brigade sighted likely enemy activity to the south. Birley's 2 RGH was the only regiment in the brigade facing south; the other two regiments were several kilometres away and facing to the west. Birley had been provided no information that enemy forces were nearby and sent a troop of Crusaders forward to investigate; the troop leader's tank was quickly knocked out by enemy fire and the rest retreated. The RGH only had one squadron of Grants, F Squadron, which the commander estimated was being fired upon by 60 German tanks. In a brief fight, eight of the Grants were knocked out and the other four retreated after they ran low on ammunition, taking multiple hits as they withdrew. Trooper Bridle, the driver on one of the last four Grants, reported that:

> We had four direct hits in less than a minute. The first shattered a track and I felt it go, almost instantaneously. Another came in through the final drives, wounding the 75mm gunner and must have just missed me; the third came clean in through the side door, just missing the high explosive box and killing Buxton, the loader, and Corporal Chamberlain. It must have been a powerful shot, for it was a very neat hole and wasn't even burred. The fourth shot must have gone straight into the engine, for almost immediately the flames roared through on both sides of the turret and Lieutenant Ades shouted to bail out.[18]

The sudden arrival of German tanks left the rest of the 22nd Armoured Brigade flat-footed as well. Lieutenant Colonel Anthony P. G. Smith, commander of the 3 CLY, deployed two of his squadrons against the enemy armour approaching Bir el Harmat at 0915 hours. In a 20-minute action, a similar situation arose: the Grants in B Squadron engaged the enemy, knocking out a few, but then decided to withdraw toward the rest of the



The Grant's large side hatch made ammunition re-loading easy. Note that the 75mm rounds are still in black cardboard shipping containers. (IWM, E12861)

regiment. The Pz IIIs proved faster than the Grants and pursued them, firing at their thinner rear armour; five Grants were knocked out, as well as eight Crusaders. Eventually, Lumsden ordered the 22nd Armoured Brigade to withdraw toward Knightsbridge, with the Germans in slow pursuit. The British tankers claimed a dozen enemy tanks were knocked out, but in this action only a handful of Pz IIIs were lost. Altogether, the 22nd Armoured Brigade had lost 24 tanks (including 16 Grants), as well as suffering nearly 80 crew casualties (including 36 captured). By 1200 hours, the 22nd Armoured Brigade was rallying near the Knightsbridge Box, held by the 201st Guards Motor Brigade.

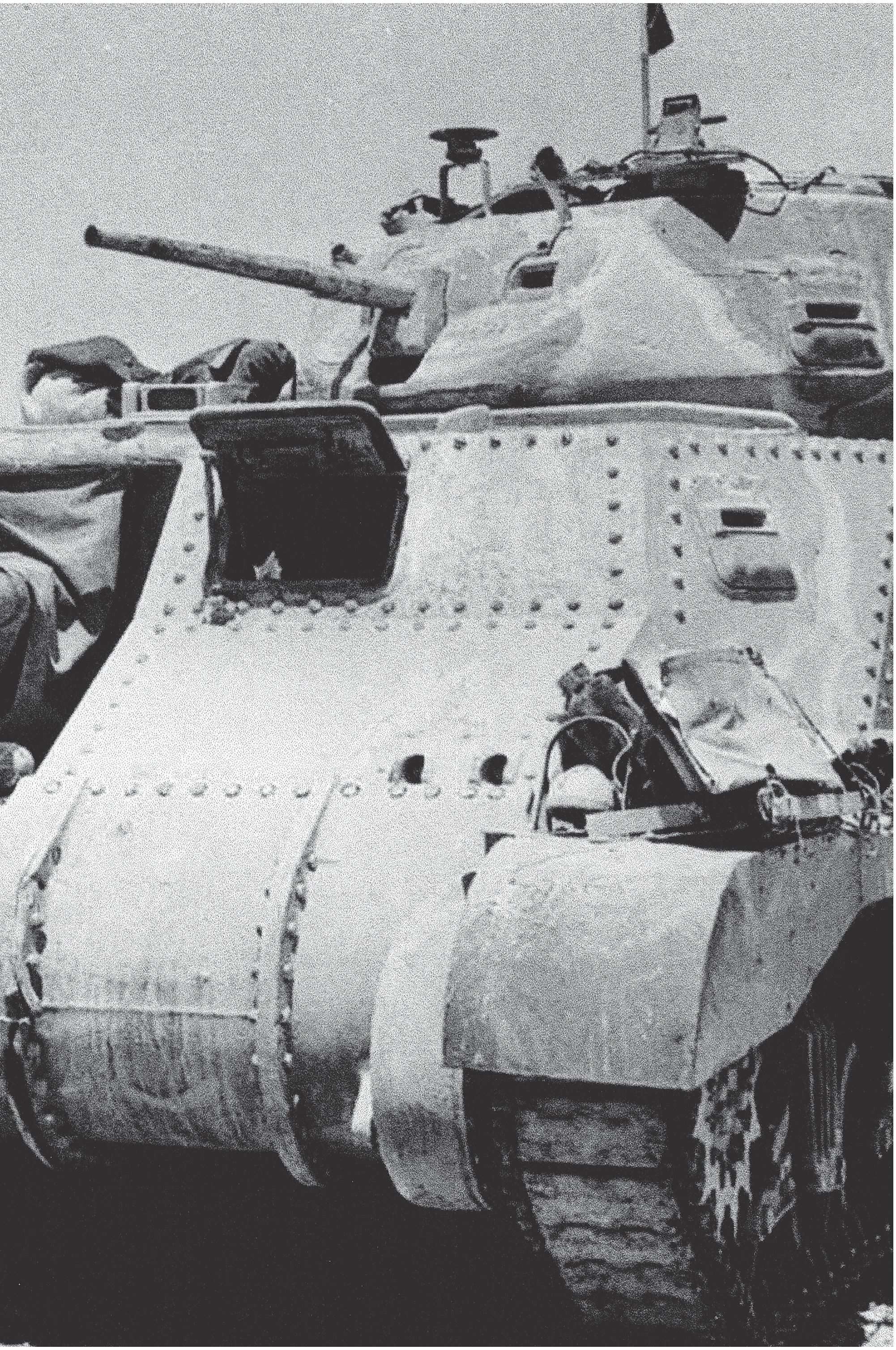
While the 22nd Armoured Brigade was engaging 21. Panzer-Division, Kleeman's 90. leichte Afrika Division split into three small *Kampfgruppen* and headed toward its primary objectives – the crossroads near El Adem and Acroma. Incredibly, one group of armoured cars from von Luck's A.A. 3 reached the crossroads soon after 1000 hours and discovered few British forces in the immediate vicinity. However, a good portion of Kleeman's division, moving further west across open desert, ran into trouble in mid-afternoon. Lumsden had ordered Brigadier Briggs' 2nd Armoured Brigade to support the 22nd Armoured Brigade, but instead of finding the German armour, Lieutenant Colonel MacDonell's 9th Lancers encountered a motorized column from Kleeman's division south-west of El Adem. MacDonell immediately committed Major Robert S. G. Perry's B Squadron with 12 Grants to the attack, while bringing up his two other squadrons, equipped with Crusaders. The German column consisted of the II./Schützen-Regiment 115, a Panzerjäger detachment, a battery of 8.8cm Flak guns and some light artillery. Oberstleutnant Roske, the column commander, quickly deployed his artillery on the open desert and a lucky round badly wounded Major Perry. Nevertheless, the British brought up a battery of 25-pounders to shell the exposed German guns, and for the first time, the Grants demonstrated the value of their ability to fire HE rounds by knocking out some of the enemy guns.[19] Major Hans von Luck was also badly wounded when one of his armoured cars was hit.[20] Once the German anti-tank fire was reduced, the British artillery battery then switched to smoke rounds and the cruiser squadrons from the 9th Lancers charged forward, cleverly using deadspace to minimize their exposure. Hauptmann Heinz Werner Schmidt, a company commander in the II./S.R. 115, saw the Grants of B Squadron closing in and was stunned to see some 5cm anti-tank rounds 'bounce harmlessly off the Grants'. Then the Grants and Crusaders methodically eliminated the German guns and shot up the motorized transport. Although four Crusader tanks were knocked out, the German battalion was crushed, having lost 320 of its 350 personnel engaged.[21] The attack of the 9th Lancers was a textbook attack, professionally conducted, and ample demonstration that British armoured units could defeat even the dreaded 8.8cm guns (four of which were destroyed) under the right circumstances.

By 1230 hours, Teege's Pz.Regt. 8 was out of fuel and low on ammunition, which slowed Rommel's advance. Nevertheless, some detachments continued to advance toward Knightsbridge, but discovered this position was well defended. Fire from 25-pounder artillery and 6-pounder anti-tank guns discouraged any further attempt against the box, so Nehring decided to bypass it to the west.

Although the XIII Corps was relatively inactive on 27 May, it did authorize the 1st Army Tank Brigade to mount local counterattacks against the left flank of the Axis envelopment. In particular, Lieutenant Colonel C. R. Reynolds' 44th RTR had a significant impact on the battle. Reynolds committed his 40 Valentine tanks around 1600 hours, sending them into the exposed open left flank of the DAK west of Bir el Harmat.[22] Rommel had no armour or anti-tank units protecting this flank – another critical mistake – which allowed the slow-lumbering Valentines to advance against the vulnerable German support units. The DAK's support elements had already been under frequent attack by the RAF's fighter-bomber units and long-range British artillery fire, which inflicted some losses. Once the British armoured counterattack was spotted – and no friendly Panzers were nearby – the German support units retreated rapidly, fleeing helter skelter to the south. While Reynolds inflicted little material damage, this action effectively isolated Rommel's armoured spearhead. Reynolds' success was achieved at the cost of 18 of 40 Valentines lost. The Italian 'Ariete' division, having been repulsed at Bir Hakeim, tried to follow in the path of Nehring's DAK, but bumped into the Matildas of Major Charles Godwin's B Squadron, 42 RTR south of Bir el Harmat. Godwin led a small battlegroup, with a battalion of infantry in support, which effectively blocked the 'Ariete's' advance and further interfered with Rommel's line of communications.

By late afternoon, the battle was spiralling into chaos for both sides. It was evident that the Italians had failed to eliminate Bir Hakeim and that Rommel's Panzers were stopped 10 kilometres short of Acroma, just west of Knightsbridge. Von Vaerst's 15. Panzer-Division was very low on fuel and ammunition, as well as having two-thirds of its tanks out of action. Likewise, von Bismarck's 21. Panzer-Division had half of its tanks non-operational. Altogether, the DAK still possessed about 125 operational tanks, but had already suffered over 30 *Totalausfälle* and another 160+ tanks damaged or suffering from mechanical problems. Kleeman's 90. leichte Afrika Division spearhead had already been forced to retreat from the El Adem crossroads and was nearly isolated from the rest of the DAK. The Italian 'Trieste' division was the only Axis mobile unit still west of the Gazala line and it had failed to make any progress in creating a breach in the mine marshes north of Bir Hakeim. Lumsden's 1st Armoured Division was rallying east of Knightsbridge, but still had about 250 operational tanks. The 7th Armoured Division was trying to assemble near El Adem but was disorganized due to the loss of its commander and rough handling of its manoeuvre brigades. Interestingly, the 8th Army had suffered far fewer armour losses on the first day than the DAK, but it had lost about one-third (55) of its Grant tanks.

During the night of 27/28 May, it was clear that the 15. Panzer-Division would be *hors de combat* for the next day. It was also apparent that Rommel's strike force was dispersed and isolated. While the British XXX Corps had been caught by surprise and failed to mass its armour effectively, there was no guarantee that Norrie would repeat the same mistake on the following day. Nevertheless, Rommel decided to try to shove past the enemy resistance points the next day and reach Acroma – a somewhat pig-headed approach to the tactical situation. On the British side, it is difficult to see why Ritchie and Norrie were on the Allied payroll, since they were incredibly ineffectual and indecisive on the first day of the Axis offensive. Instead of following Auchinleck's



A Grant tank receiving 75mm ammunition from a B-echelon truck. Timely resupply was a critical element in keeping armoured units combat-capable in a protracted desert battle. Note that the Grant has taken a non-penetrating hit on its right roadwheel housing. (Author's Collection) guidance to commit their armour *en masse*, Norrie and Ritchie allowed subordinate commanders to send in individual brigades piecemeal, with no real objectives. The lack of tactical coordination is stunning. During the course of the first day, four British armoured brigades saw action, but at no point did more than two British armoured regiments fight together. At the tactical level, the Grant tanks were hastily thrust into combat with little or no support and suffered appalling casualties.

At 0800 hours on 28 May, a *Kampfgruppe* from the 21. Panzer-Division began advancing north from Rigel Ridge but soon encountered a scratch Allied unit known as 'Stopcol', one of several small detachments created by XIII Corps to protect its rear areas. 'Stopcol' consisted of two squadrons of Lieutenant Colonel Brooke's 8 RTR with 32 Valentine tanks, two companies of South African infantry, one battery of 2-pounders and one battery of 25-pounders. Lieutenant Stuart Hamilton, a troop leader in B Squadron 8 RTR, was part of 'Stopcol' and noted that his unit had developed a tactic they called 'rapid fire' to enable them to engage German tanks. Whereas British tankers were usually trained to fire a 2-pounder round, then the commander would observe and announce any adjustments, Hamilton's unit practised firing without adjustments in order to achieve higher volumes of fire, which could be critical in the opening moments of a tank versus tank action. According to Hamilton, this tactic enabled his tanks to fire up to 15 rounds per minute (the Valentine carried a nominal load of 60 rounds of AP ammunition). When the German column approached, Hamilton's squadron were in hull-down positions and the tank commanders were 'unbuttoned', observing the enemy through binoculars. A low-flying German Bf-110 fighter-bomber appeared suddenly and dropped orange flares on the British tanks, alerting the German column. At a range of about 800–900 metres, the British Valentines opened 'rapid fire', which did distress the German tank column (probably I./Pz.Regt. 5). However, the Germans brought their artillery support up, which bombarded the Valentines and forced their commanders to button up. Gradually, the Germans were able to pick off the Valentines, knocking out 16 of them. Covered by a South African 2-pounder anti-tank battery, 'Stopcol' withdrew to the north.[23]

After reorganizing, in the afternoon the 21. Panzer-Division continued advancing north towards the sea before encountering another Allied defensive position west of Acroma, known as 'Commonwealth Keep.' The position was defended by a 141-man garrison, equipped with six captured Italian 47/32 anti-tank guns. Amazingly, the South Africans put up intense resistance against 16 German tanks before being overwhelmed.[24] However, the Germans were chagrined to discover that they could not descend the escarpment from this location to reach the sea, and Acroma, 18 kilometres to the east, was heavily defended. Furthermore, the XIII Corps moved the 90 tanks of the 32nd Army Tank Brigade (4 RTR, 7 RTR) to Point 191 (Eluet et Tamar) to prevent the 21. Panzer-Division from attacking the

1st South African Division from behind. Thus, Rommel's grand advance to the sea, like his earlier 'dash to the wire', had come up a cropper.

Meanwhile, Rommel had attempted to reconcentrate his dispersed forces around Bir el Harmat, but British resistance made this difficult. After spending all morning reorganizing, Richards' 4th Armoured Brigade was finally able to mount a counterattack around 1400 hours with about 70 tanks from the 5 RTR and a composite squadron from 3 RTR/8H against Kleeman's 90. leichte Afrika Division south-west of El Adem. The German motorized unit lacked the firepower to stand up to a large force of tanks in the open desert and was forced to retreat, abandoning several 8.8cm Flak guns in the process.[25] It appears that the British armoured counterattack also facilitated the recovery of General Messervy. Lumsden's 1st Armoured Division accomplished remarkably little on the second day of the battle. Briggs' 2nd Armoured Brigade mounted a small-scale counterattack in the morning against the immobilized 15. Panzer-Division, using the Grants of C Squadron of 10th Hussars to eliminate several 5cm anti-tank guns with 75mm HE rounds. A larger counterattack was assembled in the afternoon, using both the 9th Lancers and the 10th Hussars. By mistake, Major Robert A. Archer-Shee, commander of A Squadron, 10th Hussars, attacked a battery of 8.8cm gun (3./Flak-Regt 43) across open terrain and lost 13 of his 16 Crusaders in 20 minutes.[26] Archer-Shee was captured and soon found himself face-to-face with Rommel.[27] Despite this tactical success, the British used their artillery and fighter-bombers to continue to wear down the 15. Panzer-Division, steadily inflicting casualties, including wounding Generalmajor von Vaerst.

The Italian XX Corpo d'Armata had an equally frustrating day on 28 May. The 'Ariete' division managed to reach Bir el Harmat, where Rommel met with de Stefanis and ordered him to move north to link up with the DAK. However, beginning around 1130 hours, 'Ariete' was assailed by British armoured attacks from the 1st Army Tank Brigade (44 RTR) in the west and 2nd Armoured Brigade in the east. The X Btgl. Carri M., two Bersaglieri battalions and the V° Gruppo of Semovente fended off these attacks.[28] While few specific details on this action are available, it is clear that by nightfall 'Ariete' succeeded in linking up with the DAK and even brought a few vital supply trucks with them. The 'Trieste' division spent the day unnoticed north-west of Bir Hakeim and began to clear a path through the British mine marsh. The British failure to cover all obstacles by fire would prove to be a significant mistake. By nightfall, Kleeman's 90. leichte Afrika had reached Bir el Harmat, enabling Rommel to concentrate most of his mobile units, although their supply

A Crusader tank with mine damage to its right track. Although anti-tank mines rarely inflicted catastrophic damage on a tank, they could seriously damage the roadwheel arms, which were not easily replaced. (Mary Evans Picture Library) status was poor. During the night, Rommel went out in his personal Sd.Kfz. 250 command track (*Greif*) and personally escorted – with help from the Italians – a supply group that contained about one or two days' worth of supplies back to the isolated DAK.[29] Nevertheless, British and South African armoured cars continued to prowl in the desert south of Bir Hakeim, interdicting Rommel's lines of communication, which meant that his feat provided only short-term benefit.

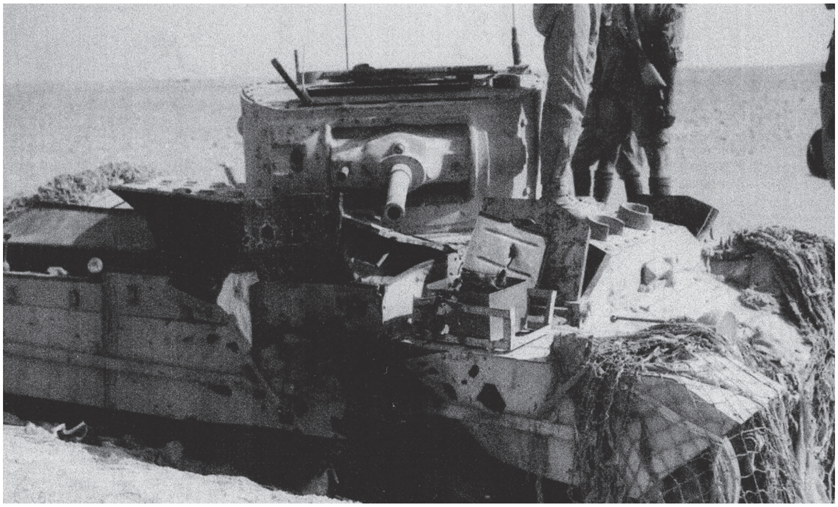
Ritchie, at his headquarters in Gambut, had very poor situational awareness of what was occurring on the battlefield and was thus unable to issue realistic orders to his subordinates. Nevertheless, he was optimistic that Rommel's offensive appeared to be failing and the DAK had taken heavy losses. Norrie, in his headquarters near El Adem, seemed at a loss on how to control his subordinate units, which meant that the XXX Corps was reduced to local commanders deciding to either attack or not attack on their own, rather than conforming to any plan. Logically, the British should have massed their armour to try to smash at least part of Rommel's isolated forces, but these British commanders proved repeatedly incapable of coordinating their forces. Lumsden told his subordinates that 'this is the most important battle of the war so far', but did little to energize his division. On the morning of 29 May, Brigadier Briggs tried to assemble an attack with his 2nd Armoured Brigade from the Knightsbridge Box around 0830 hours but quickly found himself out-numbered against the two DAK Panzer-Divisionen and the 'Ariete' division. By late morning, Brigadier William Carr arrived with two regiments of his 22nd Armoured Brigade (3 CLY, 4 CLY), but they were only lightly engaged. A mid-afternoon sandstorm greatly reduced visibility and further disrupted the attempted British counterattack. Richards' 4th Armoured Brigade belatedly arrived at 1800 hours, after the day's fighting had ended. The uncoordinated British armoured counterattack proved indecisive and casualties were light on both sides. Oberst Alwin Wolz, the commander of Flak-Regiment 135, shuffled the three 8.8cm batteries of I./Flak-Regiment 43 around the DAK perimeter near Bir el Harmat, fending off one British armoured probe after another. Yet without supplies, particularly water, Rommel's DAK could not continue to fight for much longer.

It was left to the Italians to save Rommel from his predicament, and on 30 May, they achieved great success. Engineers from the 'Brescia' division created two corridors across the mine obstacles north of the 150th Infantry Brigade box, while 'Trieste' division breached the mine belt south of the British brigade. Although British long-range artillery and aircraft could attack vehicles moving through corridors, two paths had been opened to resupply Rommel's isolated forces. While German sources claim that Rommel was unaware even of the existence of the 150th Brigade box, this appears specious, since the Italian 'Trieste' division had been under intermittent fire from this position since the beginning of the Axis offensive. More likely is that Rommel had ignored Italian tactical reports and downplayed the size of the British force in this sector. It should also be remembered that Rommel's intelligence officer, von Mellenthin, was with Gruppe Crüwell and that he was operating with a shoestring staff (some of whom were wounded). Bereft of a full operations and intelligence staff, Rommel was making decisions based more on hunches and guesswork. In any event, the British became aware of these gaps in their mine belts thanks to aerial reconnaissance and intense air battles began over the corridors. Both sides attempted to gain air superiority over this vital sector. The Hurricane Mk IIC fighter-bombers, equipped with four 20mm cannons, were particularly well-suited to this kind of ground attack role.

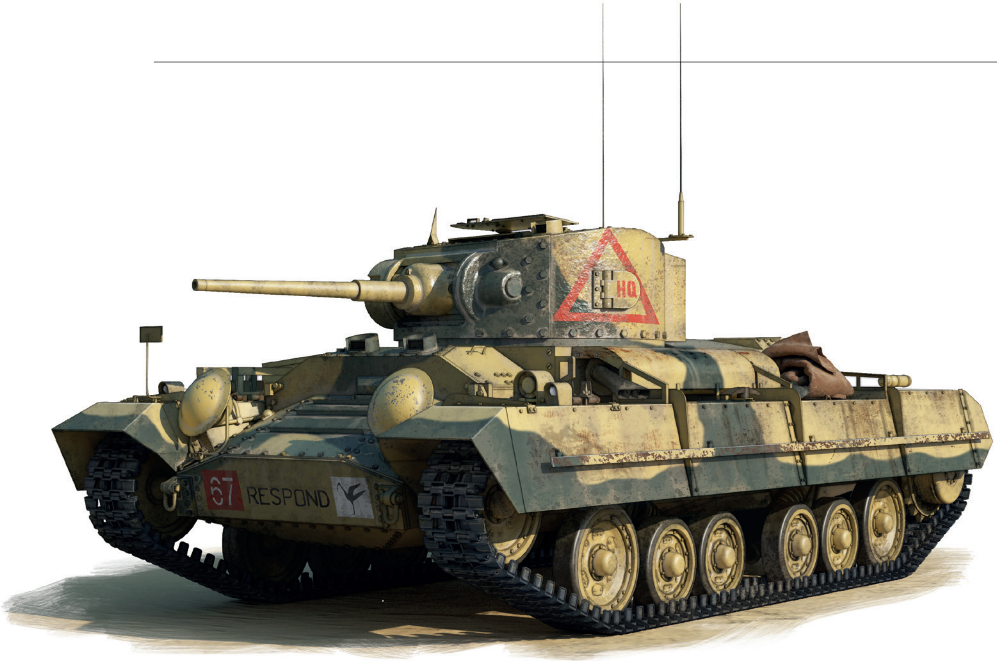
Once the breaches were created, Rommel decided to pull his forces back closer toward them, using the remaining mines to help protect his flanks while creating a strong defensive front facing eastward. This area of concentration, northwest of Bir el Harmat, was soon dubbed 'the Cauldron' (or *der Hexenkessel*). Wolz's 8.8cm Flak guns were part of this effort, although 12 guns certainly did not create the impenetrable 'Flak front' claimed by German propagandists.[30] On the day prior, the 'Ariete' division had attempted to move west toward the Aslagh Ridge, but ran into heavy resistance from British infantry and the remainder of the 44 RTR. The Italians tried to get their 8.8cm and 90/53 Flak guns into action, but lost five of them.[31] Apparently Rommel ignored the Italian action and committed a *Kampfgruppe* from Pz.Regt. 5 along the Trigh Capuzzo, which lost 11 tanks due to mines and heavy defensive fire. Rommel now knew that he had to mount a serious attack against the British-held box in order to secure his lines of communications. Initially he tried to get the Italian X Corps to mount an infantry attack from the west, but this failed miserably. Furthermore, General Crüwell, flying near the 150th Brigade box in his Fieseler Storch, was shot down and captured – removing one of the most skilled armoured leaders in Panzerarmee Afrika. He was quickly evacuated from the box in a British scout car.

Inside the 150th Brigade box south-west of Sidi Muftah, Brigadier Cecil Haydon's 150th Brigade had three infantry battalions, supported by four batteries of artillery (24 x 25-pounder and 8 x 114mm guns) and one anti-tank battery with 12 2-pounders. In addition, Brigadier Walter O'Carroll had his 1st Army Tank Brigade headquarters in the box and about 30 tanks from Major Godwin's B Squadron 42 RTR and the 44 RTR. The 150th Brigade box was a very strong position, well protected by mines and heavily entrenched, but it also was very isolated, and unless Norrie committed his armour to save the garrison, it could not endure an all-out assault. While Norrie assured Haydon that help was on the way, the British efforts to mount a coordinated counterattack against Rommel continued to fall short. On the morning of 30 May, Lumsden cobbled together a force from his two armoured brigades, which amounted to about 60 tanks (9L, 2 RGH, 3 CLY, 4 CLY); this composite force attacked the German anti-armour screen on Aslagh Ridge, with limited artillery support. Oberstleutnant Teege committed about 30 tanks from Pz.Regt. 8 to provide mobile fire support. Three German tanks and a few anti-tank guns were knocked out, but the 8.8cm Flak guns put a number of Grants out of action. The British armour opted to withdraw, under cover of smoke provided by their CS tanks. A second attempt was made at 1530 hours, which also was aborted due to heavy enemy defensive fire. During the attack, Lieutenant Colonel George W. C. Draffen, commander of the Queen's Bays, commanded his battalion from a deck chair mounted on the back deck of a Crusader tank – a rather eccentric means of exercising command and control. By the end of the day, the 2nd Armoured Brigade was reduced to just 29 operational tanks (including 12 Grants) and 22nd Armoured Brigade was left with about 50 tanks (including seven Grants).[32]

On 31 May, the British armour was so spent that regiments in 1st Armoured Division were told to observe the enemy on Aslagh Ridge, but not to lose any tanks. Ritchie expected armoured replacements to arrive from Egypt and preferred to conserve his remaining armour until he was capable of mounting a major attack. Instead, he directed the XIII Corps to commit some of its infantry to a relief effort, but this proved too little, too late. Consequently, Rommel was left a free hand to crush the 150th Brigade box. While leaving the 'Ariete' division to defend Aslagh Ridge, he shifted the 15. Panzer-Division, 90. leichte Afrika Division and the 'Trieste' division against the 150th Brigade box. German Pioniers began clearing lanes through the British mines for tanks and the DAK's field artillery was deployed to support the attack. It is important to note that all mine-clearing at this point was done by hand and that electronic mine detectors were still in their infancy, and rare. Kleeman's 90. leichte Afrika Division made the first attack on the box, supported by artillery. Then the 21. Panzer-Division joined in, with tanks from Pz.Regt. 5, but these were stopped by mines. The 'Trieste' division attacked from the south, but was repulsed by the 5th Battalion Green Howards. Although the first day of attacks only dented the perimeter, at considerable cost, the defenders were running out of ammunition. Most of the British armour in the box was also lost, reducing the 44 RTR to just five Valentines under Major Freddy Green.



A disabled Valentine tank, probably from the 44 RTR, which was eliminated when the 150th Infantry Brigade box was overrun by the Afrika Korps on 1 June 1942. (Author's Collection)



A Valentine Mk III from 50 RTR at El Alamein. Equipped only with a 2-pounder gun, the Valentine Mk III was not particularly effective at the infantry support mission and it was vulnerable to German anti-tank weapons. However, it was mechanically reliable and available in quantity. (© Osprey Publishing Ltd, by Felipe Rodríguez. From NVG 321 *Allied Tanks at El Alamein 1942*)

Rommel mounted an all-out concentric assault against the box at 0730 hours on 1 June, supported by Stuka dive-bombers and heavy artillery. Brigadier Haydon was killed in the bombardment, and German assault groups with infantry, Pionier and Panzerjäger began to eliminate the British positions; by noon, the defence was beginning to collapse. Rommel chose to lead from the front, as if he was still at Caporetto. He proved impervious to enemy artillery fire, but his two senior staff officers – Generalmajor Alfred Gause and Oberstleutnant Siegfried Westphal – were both seriously wounded. Nevertheless, the Germans continued to pound the box mercilessly and by 1430 hours, British resistance collapsed. The DAK took about 3,000 prisoners, including Brigadier O'Carroll. All the British armour in the box was lost and many of the armour officers were killed or wounded in the final fighting. At considerable cost, Rommel had finally eliminated this thorn in his side and cleared a viable supply line back to the west.

The first phase of the Battle of Gazala concluded with both sides temporarily fought out and retiring to their respective corners. When taken together, the five days' worth of armoured combat around Bir el Harmat, Knightsbridge and the Cauldron were some of the most concentrated tank engagements of the Second World War, involving two German, one Italian and two British armoured divisions (initially totalling nearly 1,000 tanks) fighting in an area that was roughly 40 kilometres by 25 kilometres. The great clash of armour had not proved to be one single mighty battle but rather a daily attritional grind that reduced the armoured divisions to about one-quarter of their starting strength. Tank crews were exhausted, subsisting on an hour or two of sleep per day and a minimum of water. Most of the remaining tanks had been hit several times, while many others sat immobilized, awaiting repairs and spare parts.

The appearance of the Grant tanks did not confer any great tactical advantage to the British armoured units, since they were continuously misused by senior commanders at division and corps level. German tankers on the Eastern Front had been fighting Red Army units equipped with the T-34/76 tank for nearly a year, and the Wehrmacht had already instituted a crash programme, to improve its anti-tank capabilities. By the time that the Grant reached the battlefield, even the DAK was receiving better tanks and new anti-tank guns which could defeat it. After five days of combat, roughly two-thirds of the 8th Army's original Grants had been knocked out. From the Allied perspective, the appearance of the Pz III Ausf J and Pz IV Ausf F2 tanks with long-barrelled guns was a disturbing if not unexpected evolutionary development. The DAK had too few of these tanks in May 1942 to make any real difference on the battlefield. Instead, it was the noticeable improvement in DAK tactics, with greater cooperation between Panzers, Panzerjäger and Flak guns which stunned the British. The Afrika Korps veterans were able to achieve a combat synergy on the battlefield, often using bits and pieces of units, which continued to elude the 8th Army. During the Cauldron battle, the British Army did manage to get its first look at a new class of armoured fighting vehicle – the assault gun. Armoured cars from the 4 SAACR managed to capture a StuG-III Ausf D assault gun south of Knightsbridge (one of three with the DAK at this point), which indicated that the Wehrmacht was willing to devote resources to the infantry support role.[33] Compared to the slow-moving British infantry tanks armed with 2-pounder guns, the StuG-III was an elegant technical solution comprised of off-the-shelf components.

Rommel made serious and imprudent operational mistakes in the opening days of the Gazala battle, which put the entire DAK at risk of annihilation. As a manoeuvre commander, he was obsessed with conducting rapid, grand encircling manoeuvres aimed at some nebulous fulcrum in the enemy rear areas, as if he could repeat the dazzling success achieved in France 1940 in each one of his campaigns. Ignoring intelligence and logistic factors that might restrain his operation, Rommel preferred to plunge into a fast-moving melee, hoping to defeat the enemy by inflicting chaos and confusion upon them rather than through defeating their main armoured forces. To some extent, Rommel had the measure of his opponents and recognized that their dilatory and timid responses to any German advance were weaknesses waiting to be exploited. *Unternehmen Theseus* was the kind of operation that clearly should have begun with shaping attacks against some of the more exposed positions to better understand the British defences and make it more difficult for Ritchie to assess where the main blow was falling. Yet Rommel was unwilling to consider a more methodical approach to battle and refused even to maintain any mobile reserves, even though he possessed far more autonomy than German armoured commanders on the Eastern Front. His tactical strong suits – energetic and bold decision-making combined with a ruthless streak – did stand him well in the tactical fighting around the Cauldron.

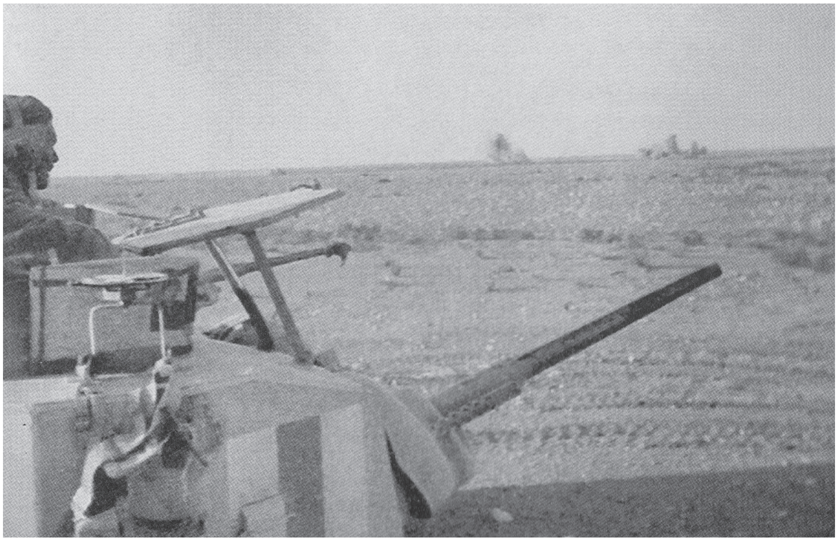
In contrast, the British division and corps commanders, as well as Ritchie, all performed in a remarkably pedestrian manner during the first week of the Axis offensive, rarely exhibiting energy or boldness. The main mass of British armour, nine armoured battalions with over 410 tanks in XXX Corps, was frittered away in piecemeal attacks or left unemployed for days at a time. Meanwhile, another five armoured battalions with 230 infantry tanks were dispersed to support XIII Corps. British post-war histories tend to affix blame for the inability of 8th Army to mass its armour on a variety of factors, particularly communication problems and sandstorms, but these factors impacted Rommel as well. Auchinleck and his key commanders kept pointing to technical defects in their tanks as the root cause of failure, although problems such as the Crusader tank's notoriously leaky water pump had no bearing on their inability to coordinate units via radio or personal initiative. Instead, the proximate cause of the 8th Army's misuse of its armoured assets was ineffectual leadership from the top (Auchinleck, Ritchie) down to the corps commanders (Gott, Norrie) and division commanders (Messervy, Lumsden). None of these men had any deep experience or understanding of armoured operations or even how to properly organize a combined arms operation involving two or more brigades. Up to the beginning of the Second World War, Auchinleck, Ritchie and Gott had never commanded any unit larger than an infantry battalion and Norrie was the only one who had commanded armour prior to his ascent to senior command. In direct contrast to Rommel's aggressive, up-front style of leadership and rapid decision-making (which was often faulty), the British senior leaders were inclined toward inertia and indecision. Another noticeable area of difference in leadership styles is that Rommel was comfortable in operating on a non-linear battlefield, whereas the British leaders kept trying to impose a linear structure on their operations. Faced with a self-confident opponent who could decide and act more quickly than they could, Auchinleck, Ritchie and their subordinates struggled to find a means to gain the initiative.

TOBRUK: ROMMEL'S VICTORY, JUNE 1942

'One of the first lessons of motorized warfare was that speed of manoeuvre and quick reaction in command are decisive.'

Rommel

Having avoided catastrophe, Rommel moved to improve his position around the Cauldron, in expectation that the 8th Army would soon launch a major counteroffensive. Even after the fighting in the Cauldron, Rommel still had a significant amount of armour left. The two DAK Panzer-Divisionen each had 60–80 operational tanks (totaling 100 Pz III and 23 Pz IV), while the Italians had 81 tanks with 'Ariete' and 15 with 'Trieste'; altogether, about



Lieutenant Colonel Robbie D. W. Uniacke, commander 5 RTR, observes one of his squadrons in contact from the turret of his Stuart tank. Uniacke was killed in action on 2 June 1942. (Author's Collection)

250 tanks. A handful of tank replacements had arrived to replace losses, including 6 Pz III and 3 Pz IV Ausf F. Once his armour was refitted and replenished, Rommel intended to eliminate the Bir Hakeim box, which the British were using as a springboard to harass his lines of communications. While the DAK had been busy reducing the 150th Brigade box, Major Richard E. Ward conducted a raid with six Stuarts from his A Squadron 5 RTR south of Bir Hakeim and succeeded in capturing a 60-vehicle Italian convoy. In the brief action, the Stuarts destroyed two of the three escorting Italian AB40/41 armoured cars.[34] However, Rommel was reluctant to commit his main strength against Bir Hakeim until the expected British counterattack was defeated. Instead, he sent the 'Trieste' division and Kleeman's 90. leichte Afrika Division on 2 June to invest Bir Hakeim. The Italians presented a surrender demand to the French commander, Général Koenig, who refused, saying 'we are not here to surrender'. For the time being, the Bir Hakeim box was placed under loose siege, with daily air and artillery strikes to wear down the defenders.

Rommel also conducted a diversionary attack on 2 June, sending a *Kampfgruppe* from 21. Panzer-Division north toward Eluet et Tamar. When forced onto the defence, Rommel preferred to conduct an active defence in order to keep the enemy off balance and to instill confidence in his troops. When the German advance was reported by 8 RTR, which was operating in this sector, Norrie directed Richards' 4th Armoured Brigade to respond. The brigade advanced with Roberts' 3 RTR (13 Grants, 16 Stuarts) and Uniacke's 5 RTR (14 Grants, 14 Stuarts), but had difficulty finding the enemy. In midafternoon, a sandstorm began, which quickly reduced visibility to 20 metres. Nevertheless, the two British armoured regiments continued to advance in the murk, but lost contact with each other. Under these unfavourable conditions, the 5 RTR unexpectedly bumped into enemy tanks at close range and hurriedly deployed on line. Given the poor visibility, the 75mm guns on the Grants offered no real advantage against fleeting close-range targets. Instead, German 5cm anti-tank guns, which could not be seen, started hitting one tank after another from concealed positions. With his regiment disorganized and taking heavy casualties, Uniacke tried to withdraw but was killed by machine-gun fire. Eventually, the 5 RTR succeeded in withdrawing, but it had lost 18 tanks (including nine Grants) and 51 crewmen dead or missing.[35] The 3 RTR also bumped into the 21. Panzer-Division, losing one Stuart destroyed and three Grants damaged. Although a relatively minor action, the 4th Armoured Brigade's costly rebuff added to worries in the 8th Army senior leadership that their armour units still could not engage Afrika Korps Panzer units on equal terms.

Meanwhile, Ritchie was seeking a means of striking a heavy blow against Panzerarmee Afrika, but the 'how' and 'where' eluded him. Consequently, he adopted a 'council of war' approach, proposing and evaluating various courses of action over the course of nearly a week. Despite his shortcomings in command, Ritchie was a skilled staff officer and he recognized that taking on the Afrika Korps in a head-on clash was not an optimal solution. Intelligence gleaned from intercepted Engima reports also indicated that Rommel was expecting a British counterattack against his forces in the Cauldron.[36] Instead, Ritchie considered that an attack against the Italian XXI Corps offered a better option, by using the infantry tanks of XIII Corps to crush less capable Italian units. Given the lack of Axis armour or heavy Flak in this sector, British armoured units stood an excellent chance of creating a breakthrough that might force Rommel to withdraw at least some of his Panzers from the Cauldron. Auchinleck and the 8th Army staff supported this idea, but Norrie and Messervy doubted that XXX Corps could hold off Rommel alone while

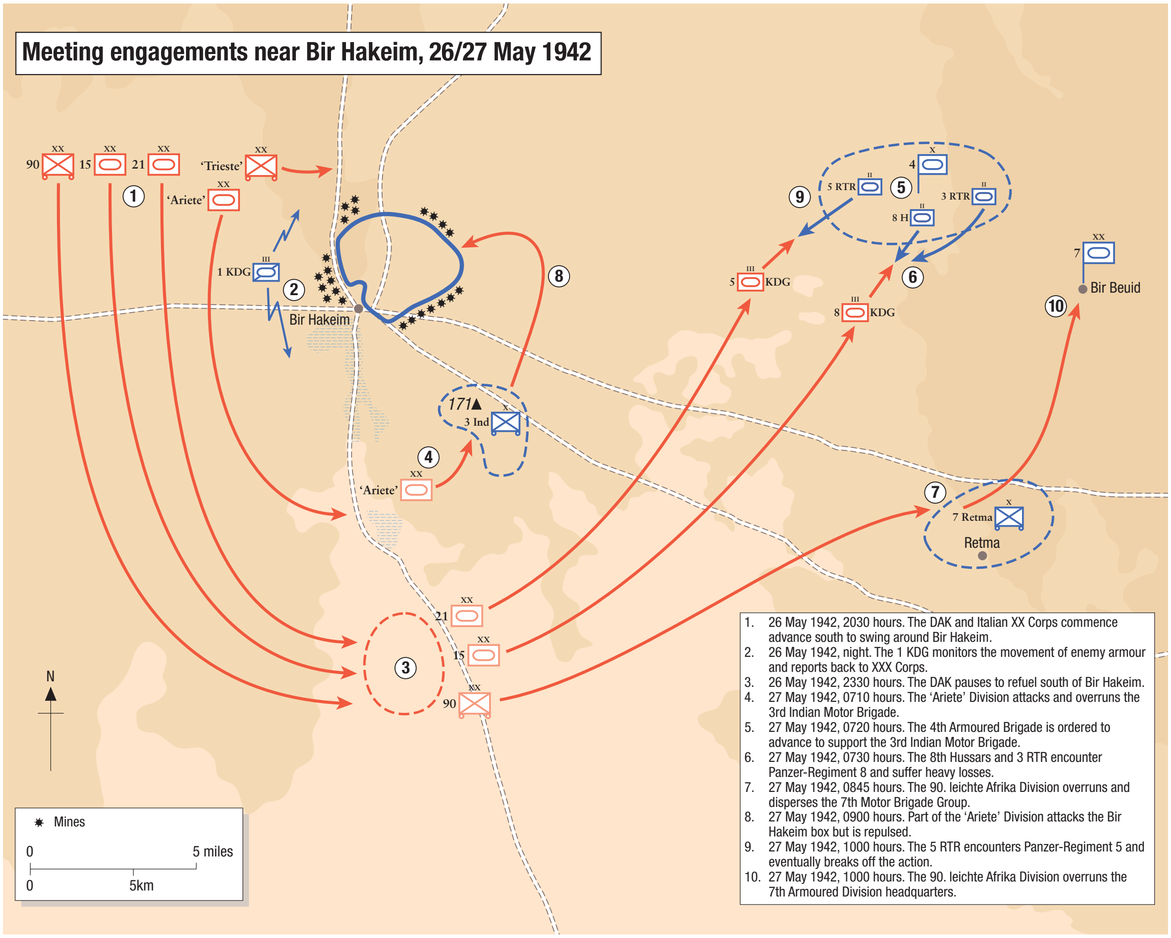
The commander of a Stuart tank cunningly uses a knocked-out Pz III tank as cover while observing the enemy. Veteran tank crews learned to use anything available to reduce their exposure. (IWM, E12670)

XIII Corps was busy crushing the Italians, so that course of action was quickly dropped. Instead, Norrie and his subordinates suggested an absurd second course of action: a wide envelopment south of Bir Hakeim using motorized columns from the newly arrived 5th Indian Division under Major General Harold R. Briggs. Given the tactical success achieved by Major Ward's armoured raid against Italian convoys, there was a consensus that more aggressive behavior in this sector might lead to greater success. Apparently, Norrie and Messervy had forgotten that Rommel had recently defeated two unsupported infantry brigades caught in the open near Bir Hakeim. The envelopment course of action was little more than large-scale raiding by reinforced Jock Columns, which was unlikely to produce decisive results.

Most of the great commanders of history have shunned councils of war, since the goal is often to produce consensus rather than to seek an optimal (or original) solution to a military problem. Having failed to gain fulsome support for either envelopment or attacking the Italians, Ritchie's senior leaders recommended the simple solution of launching a direct frontal attack on Rommel's forces in the Cauldron. Despite his reservations about attacking into the teeth of Rommel's alert defences, Ritchie acquiesced to this course of action. Ideally, a frontal attack might work if 8th Army could coordinate a simultaneous attack by both XIII and XXX Corps using all available armour, artillery and infantry in a 'big push'-style solution, as in 1918. Instead, Operation *Aberdeen*, as the counteroffensive was designated, was neither well planned nor provided adequate resources. Ritchie took no ownership over the plan and allowed his subordinates to run with it. Furthermore, no one officer was put in charge of coordinating the operations of both corps, so unity of command was sacrificed from the outset.

As it turned out, 8th Army had very little armour or infantry in reserve to mount the operation. All three armoured brigades had been reduced to a single composite regiment; about one-third of the original tanks had been destroyed or abandoned, and another third had been evacuated to the rear for repairs, leaving fewer than 100 operational tanks in XXX Corps. On 1 June, the 1st Armoured Brigade (1 RTR, 6 RTR and 4H) had just arrived at Ed Duda from refitting in Egypt; this was a fresh veteran unit, equipped with 117 new tanks (including 71 Grants). Yet instead of assigning the 1st Armoured Brigade to Operation *Aberdeen*, the decision was made to transfer its tanks and some of its personnel to replenish the other three armoured brigades. Norrie's XXX Corps assigned Carr's 22nd Armoured Brigade (with 156 tanks) to Messervy's 7th Armoured Division for Operation Aberdeen, along with two infantry brigades from Briggs' 5th Indian Division. The Indian brigades were poorly suited to this mission, due to inexperience in the desert and inadequate equipment. Gott's XIII Corps assigned Willison's 32nd Army Tank Brigade (70 tanks) plus one infantry battalion from the 50th Infantry Division. Operation *Aberdeen* was not much of a 'big push'. While artillery support was plentiful, the Desert Air Force's ability to provide close air support was dwindling due to heavy losses in the first week of the campaign.

Operation *Aberdeen* began at 0300 hours on 5 June, when the 8th Army began a large artillery preparation (four regiments with 96 25-pounders) against suspected Axis anti-tank gun positions on Aslagh Ridge. As it was later discovered, inadequate British reconnaissance had failed to identify the Axis main line of resistance and most of the bombardment landed on open desert. While the bombardment was still in progress, the 10th Indian Brigade dismounted from trucks and began advancing forward on foot – encountering no resistance. Initially, the 10th Indian Brigade was able to secure its objective on Aslagh Ridge, but failed to identify the actual Axis positions 3 kilometres further west. Around 0435 hours, Carr's 22nd Armoured Brigade and the 9th Indian Brigade began advancing to Aslagh Ridge, with the intent of passing through the 10th Indian Brigade and advancing to the next objective near Sidi Muftah. Visibility was poor due to blowing sand. Carr's brigade advanced directly into an Axis engagement area, covered by the 'Ariete' division and part of 15. Panzer-Division. Axis anti-tank guns, Flak and artillery poured a heavy defensive fire into the Allied units, inflicting heavy casualties. Eventually, Carr


Meeting engagements near Bir Hakeim, 26/27 May 1942

1. 26 May 1942, 2030 hours. The DAK and Italian XX Corps commence advance south to swing around Bir Hakeim.
2. 26 May 1942, night. The 1 KDG monitors the movement of enemy armour and reports back to XXX Corps.
3. 26 May 1942, 2330 hours. The DAK pauses to refuel south of Bir Hakeim.
4. 27 May 1942, 0710 hours. The 'Ariete' Division attacks and overruns the 3rd Indian Motor Brigade.
5. 27 May 1942, 0720 hours. The 4th Armoured Brigade is ordered to advance to support the 3rd Indian Motor Brigade.
6. 27 May 1942, 0730 hours. The 8th Hussars and 3 RTR encounter Panzer-Regiment 8 and suffer heavy losses.
7. 27 May 1942, 0845 hours. The 90. leichte Afrika Division overruns and disperses the 7th Motor Brigade Group.
8. 27 May 1942, 0900 hours. Part of the 'Ariete' Division attacks the Bir Hakeim box but is repulsed.
9. 27 May 1942, 1000 hours. The 5 RTR encounters Panzer-Regiment 5 and eventually breaks off the action.
10. 27 May 1942, 1000 hours. The 90. leichte Afrika Division overruns the 7th Armoured Division headquarters.

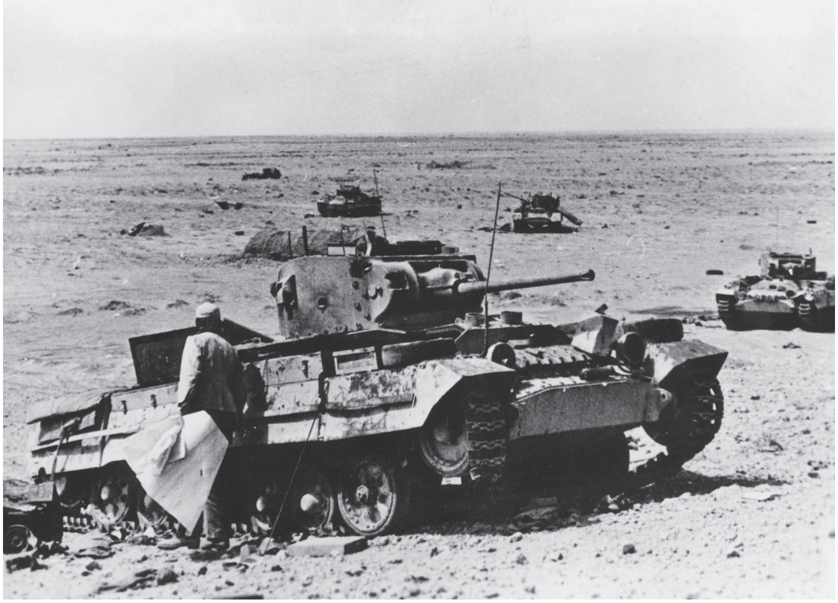
A Stuart refuelling from an RAF bowser. The Stuart had a voracious appetite for fuel, which limited its operational range on the desert battlefield. Note that the crew is not checking their track, which well-trained tankers should conduct at every halt. (IWM, E19587)

ordered his brigade to withdraw, after losing 60 tanks, leaving the 10th Indian Brigade without armour support. RAF air support for the attack was minimal and the few light bomber sorties that were conducted failed to make an impression on the Axis artillery positions.[37] Due to poor coordination between XIII Corps and XXX Corps, the 32nd Army Tank Brigade did not begin its attack from the north until Carr's brigade had already been repulsed. Willison's infantry tanks attacked with only one battery of 25-pounder guns in support and ran straight into an undetected minefield. With the British tanks stymied in the open, the 21. Panzer-Division's guns on Sidra Ridge proceeded to shoot them to pieces, knocking out 58 of 70 tanks. Von Mellenthin described the 32nd Army Tank Brigade's effort as 'one of the most ridiculous attacks of the campaign'.[38] By early afternoon, it was evident that the British counterattack was turning into a complete disaster.

Sensing disarray in the enemy, Rommel mounted a late afternoon attack with the 15. Panzer-Division and 'Ariete', which rapidly moved east to Bir el Harmat, overrunning the headquarters of 5th Indian and 7th Armoured Divisions. Then the Axis armour turned north, routing the 9th Indian Brigade and isolating the 10th Indian Brigade on Aslagh Ridge. On the ridge or nearby, the Allies had four infantry and four artillery battalions, but were protected only by one battery of nine 37mm Bofors anti-tank guns. With Messervy hiding from enemy tanks, the 7th Armoured Division was again deprived of leadership at a critical moment and unable to effectively use its armour to support the 5th Indian Division. By nightfall, the 10th Indian Brigade and its supporting artillery were isolated on Aslagh Ridge. The next morning, the Axis began powerful concentric attacks against the isolated Indian brigade, eliminating one Allied unit at a time. Although fighting continued all day on 6 June, the Indian brigade was completely destroyed, with 4,000 prisoners taken and 96 25-pounder guns lost.

The British 4th Armoured Brigade did attempt to interfere with the 15. Panzer-Division before it could annihilate the Indian brigade, but these efforts proved costly. In a brief late afternoon action against a group of German tanks from I./Pz.Regt. 5 and Flak guns, the 2 RGH lost its commander, Lieutenant Colonel Normand A. Birley, who lost both legs when his tank was struck by an 8.8cm round.[39] 'Pip' Roberts advanced with two squadrons of 3 RTR, but was also roughly handled by the German tanks. Roberts was in the turret of his Grant command tank when an enemy shell hit the 75mm gun on his tank; an HE round was just being loaded into the breach and it exploded – apparently a rare but deadly open breach explosion, which devastated the interior of the tank. Roberts was injured and two members of the crew killed. The interior of Roberts' Grant was spattered with blood and bits of burnt flesh. After Roberts was wounded, the rest of 3 RTR withdrew.[40]

Having seen off the expected British counteroffensive, Rommel turned to deal with Bir Hakeim, which had been pounded for a week by air bombardment. The 3,700 French defenders were resolute, but short on both artillery ammunition and water. The Bir Hakeim box itself measured about 4 x 4 kilometres and was heavily fortified with bunkers, trenches, barbed wire and mines. Despite the fact that he had no plan to relieve the garrison, Ritchie radioed Général Koenig on the evening of 6 June, instructing him to 'hold for 48 more hours'. On 7 June, the Axis completed the encirclement of Bir Hakeim and Kampfgruppe Baade arrived from the 15. Panzer-Division, with some armour from Pz.Regt. 5, two motorized infantry battalions from Schützen-Regiment 115 and some artillery. Kampfgruppe Hecker, which included the two remaining StuG III assault guns, was also committed to the reduction of Bir Hakim. Rommel was loathe to sacrifice troops and equipment



On 5 June, the British launched Operation *Aberdeen* against the German forces in 'the Cauldron'. The result was a disastrous repulse, with heavy losses in armour. Here, knocked-out British Valentine tanks litter the battlefield. (SDZ, 00333478)

in eliminating the garrison and instead turned to the Luftwaffe's on-call firepower. On the morning of 8 June, 45 Ju-87 Stukas bombed Bir Hakeim, followed by two more large strikes later in the day. Gruppe Baade mounted a ground attack and seized high ground on the northern part of the box, but incurred significant casualties. On the afternoon of 9 June, Gruppe Baade attacked again, supported by more large-scale Stuka attacks. The next afternoon, 110 Luftwaffe aircraft attacked Bir Hakeim, dropping 140 tons of bombs on the garrison.[41] With his perimeter slowly dissolving and water and ammunition nearly exhausted, Général Koenig opted to conduct a breakout operation on the night of 10/11 June. Apparently Rommel was caught by surprise, since most of the French garrison succeeded in escaping through the Axis lines and reached safety. The French claimed to have knocked out 51 Axis tanks (including 31 in the 'Ariete' attack on 27 May), five self-propelled guns and 15 armoured cars at Bir Hakeim, although the Axis could recover and potentially repair some of these vehicles. While Panzerarmee Afrika had won at Bir Hakeim, the cost in time and resources (over 1,300 Luftwaffe sorties) was exorbitant. The Desert Air Force had flown about 1,500 sorties in support of the French garrison, but with less success.

The protracted defence of Bir Hakeim had provided Ritchie with a precious respite, but he failed to make good use of it. After the failure of Operation *Aberdeen*, Ritchie was inclined to abandon the Gazala line and fall back to Egypt, but Churchill and Auchinleck would not allow him to retreat. Instead, Ritchie was told to refuse his line and create new defensive positions to protect the vital supply depot at Belhamed. The British armoured brigades were in a frightful state after *Aberdeen*, with all regiments composed of composite units, borrowing tanks and personnel to restore some combat capability. However, after the loss of so many leaders and veteran crews, the new composite units were shadows of the armoured regiments that 8th Army possessed at the beginning of the battle. On paper, Ritchie had 185 tanks in the three armoured brigades (including 77 Grants) and 63 infantry tanks in XIII Corps. All three brigades and some regiments had been transferred back and forth between 1st Armoured Division and 7th Armoured Division, which further undermined cohesion. In contrast, Rommel still had 124 German medium tanks (110 Pz III and 14 Pz IV) and about 70 Italian medium tanks, concentrated in three veteran divisions. The obvious lynchpin of the British defence was now the Knightsbridge Box, held by 201st Guards Motor Brigade. Most of the British armour was deployed close to Knightsbridge to protect this key position. Norrie also had the 7th Motor Brigade Group and 4 SAACR operating between Bir el Gubi and Bir Hakeim, still trying to harass Rommel's lines of communications.

On the afternoon of 11 June, Rommel ordered Nehring to move east toward El Adem with the 15. Panzer-Division and the 'Trieste' division. Kleeman's 90. leichte Afrika Division and two armoured reconnaissance battalions (A.A. 3 and A.A. 33) were ordered to swing wide and go further east, toward El Adem and Belhamed. Rommel's intent was to make a feint against the Knightsbridge Box with the 21. Panzer-Division, while employing the bulk of the DAK to outflank the position as well as threatening the British lines of communications. Once again, Rommel hoped to impact enemy morale by means of an audacious enveloping manoeuvre. Norrie's reconnaissance spotted the Axis armour moving eastward and sent the 2nd and 4th Armoured Brigades (with 45 and 95 tanks) to Point 169, but armed only with vague orders to intercept the enemy. By nightfall, both armoured groups were observing each other at long range, in an odd stand-off. On the same day, a US Army training group led by Major Henry Cabot Lodge Jr (a reserve officer who was also a serving US senator from Massachusetts) and consisting of 15 enlisted soldiers from the US Army's 1st Armoured Division managed to attach itself to the 4th Armoured Brigade. Major Lodge's group had been attached to the 4th Hussars refitting in the rear since 6 June, but now saw an opportunity to participate in actual combat.

The next morning, 12 June, the 15. Panzer-Division began taking long-range shots with its artillery and 8.8cm Flak guns against the 4th Armoured Brigade, which was deployed on line. After losing one Grant, Richards ordered his brigade to pull back a bit to a less exposed position. Having seen how passively the British armour was behaving, Rommel ordered the 21. Panzer-Division to shift east to strike the right flank of the 4th Armoured Brigade while the 15. Panzer-Division hit its left flank. The German armoured attack gathered momentum in early afternoon and used their now perfected tactics of leap-frogging tanks and anti-tank guns forward during periods of limited visibility due to blowing sand and haze. The 4th Armoured Brigade was soon pummeled by an intense crossfire from several sides. Three Pz IV Ausf F2 in I./Pz.Regt 8, now equipped with armour-piercing ammunition, used their long 7.5cm guns to knock out six British tanks at long range. The 2nd Armoured Brigade, which came up in support, lost at least 17 tanks as well. Then the 22nd Armoured Brigade tried to intervene and it too suffered casualties. Even the hard-luck 32nd Army Tank Brigade was brought up, but it lost 33 of its 63 tanks. British command and control during the fighting around Knightsbridge was abysmal: Messervy was missing again and Lumsden could not reach Norrie by radio for 12 hours, which effectively removed XXX Corps from the equation.[42] By late afternoon, the battered British armoured units began disengaging. Altogether, XXX Corps estimated that its three armoured brigades had lost 105 of their 206 tanks in the tank

The fighting in the Cauldron seen from the position of British support echelons. Artillery barrages, smoke and dust greatly limited the ranges at which enemy or friendly activity could be observed. (Battlefield Historian, BHC 01280)

The crew of a disabled Grant surrendering. The 8th Army lost over 100 tanks during the fighting around Knightsbridge on 12 June 1942. For the first time in North Africa, British front-line morale cracked. (Author's Collection)

battle east of Knightsbridge on 12 June.[43] German armour losses are difficult to ascertain, but Pz.Regt. 8 admitted the loss of five Pz III and many more were damaged. Accounts from both sides on the tank battles around Knightsbridge are incomplete and often contradictory, although it is clear that Nehring's Panzers emerged victorious.

After the Battle of Knightsbridge, Major Lodge claimed that the Americans had manned three Grant tanks in the action and destroyed nine German tanks. While it is likely that American tankers did briefly serve on Grant tanks near the front line, it is unclear if they saw any action and very unlikely that inexperienced crews, serving in an unfamiliar unit, would have inflicted so much damage on the Germans. Based on British commentary about the incident, Major Lodge was kept out of combat and only his enlisted soldiers actually manned three Grant tanks for a period of just one or two days. After the defeat at Knightsbridge, the US Army training detachment was sent to the rear, reducing their role to that of 'battlefield tourists'. Essentially, the brief appearance of American tankers on the battlefield was an unsanctioned publicity stunt, instigated by a career politician who was running for re-election back home.

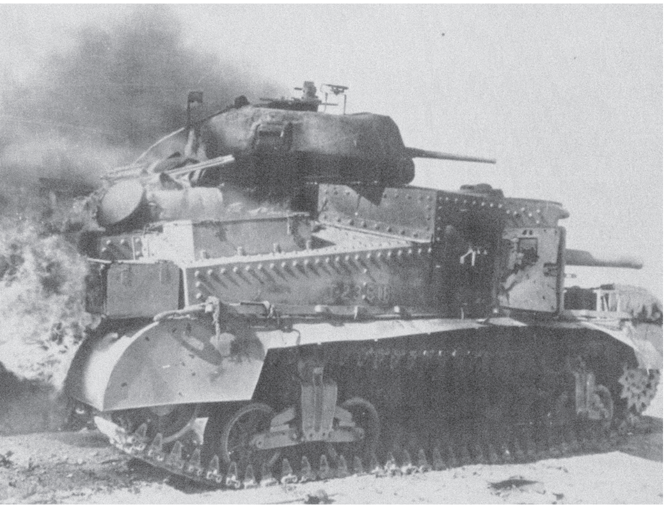
On 13 June, Rommel moved to cut off the 201st Guards Motor Brigade in the Knightsbridge Box, but was hindered by sandstorms during the morning. Von Bismarck's 21. Panzer-Division pushed along the Maabus er Rigel Ridge, north-west of Knightsbridge, while the 15. Panzer-Division moved against Bir Bellefaa, just east of Knightsbridge. Lumsden's 1st Armoured Division had been put in charge of the remaining British armour and was tasked with delaying, if not stopping, the German advance. Initially, the 3 CLY and Queen's Bays were deployed near Bir Bellefaa, but they were quickly out-flanked and expended most of their ammunition trying to fend off the 15. Panzer-Division. For the first time, the Germans observed British tankers abandoning intact armoured fighting vehicles (Stuart tanks) and surrendering. In desperation, the 32nd Army Tank Brigade committed a composite squadron from the 7 RTR and 42 RTR under Lieutenant Colonel Henry R. B. Foote and two squadrons of Valentines from 8 RTR to prevent the 21. Panzer-Division from rolling up the defences from the west. Foote fought a classic armoured delaying action against a superior enemy force, even though the Matilda now lacked the firepower and mobility to compete with the latest tanks. Foote requested divisional artillery to fire smoke rounds to provide some cover from long-range 8.8cm fire.[44] Despite the loss of 13 infantry tanks, Foote managed to keep the trail to Knightsbridge clear and the 201st Guards Motor Brigade evacuated the box during the night of 13/14 June. Foote was later awarded a well-deserved Victoria Cross for his leadership during the fighting around the Cauldron and Knightsbridge.

After the defeat at Knightsbridge, Ritchie was left with fewer than 100 operational tanks and Rommel was now in a position to threaten Belhamed and isolate Tobruk. Ritchie recognized the imperative need to evacuate the remaining positions in the outflanked Gazala line and save XIII Corps. In the early hours of 14 June, Ritchie discussed evacuation plans with Gott and by 0700 hours the XIII Corps had received orders to withdraw eastward within 24 hours.[45] Ritchie made this decision without informing Auchinleck, who was opposed to evacuation, and avoided mentioning it until XIII Corps was already pulling out of its positions. Most RAF units had already begun withdrawing to Egypt, which immediately ceded air superiority to the Luftwaffe. Although Rommel's forces were exhausted and seriously depleted, he began to shift gears into pursuit mode once he became aware that the 8th Army was abandoning the Gazala line. Rommel sent von Bismarck's 21. Panzer-Division north toward Acroma in an effort to cut off XIII Corps' escape route, but the South Africans had created several new blocking positions

A British patrol examines the smoking remains of a destroyed German Pz III tank, early June 1942. The turret appears to have been blown off by a massive internal explosion. (IWM, E12795) which conducted tenacious rearguard actions. Before German Panzers could reach the Via Balbia, the bulk of the 1st South African Division escaped east along the coast, reaching Tobruk on the night of 14/15 June, then continued to the Egyptian border the next day.

A small vanguard from the 15. Panzer-Division, comprised of six Pz III tanks and the III./Schützen-Regiment 115, did succeed in reaching the Via Balbia north of Acroma and briefly blocked the road. However a mixed British–South African battalion-size rearguard, which included a squadron of armoured cars from the 6 SAACR, managed to fight its way through the roadblock on the afternoon of 15 June. The German blocking detachment was badly mauled, losing all its tanks and 34 dead or missing.[46] Amazingly, Major General Ramsden's 50th Division cleverly escaped south through the open desert on the night of 14/15 June and then headed east, along with 11 Valentine tanks from 8 RTR, which Rommel had not expected. By 16 June, Ramsden's division had reached the Egyptian frontier.[47] Meanwhile, Ritchie kept Auchinleck in the dark about his intentions throughout 14 June and was less than honest in his situation reports. Once Auchinleck learned the truth on the night of 14/15 June, he directed Ritchie to hold Tobruk, in compliance with instructions from Churchill.

Tobruk was not prepared to withstand another siege, since its mines and obstacles had been transferred to the Gazala line. The 2nd South African Division, reinforced with the 201st Guards Motor Brigade and the 11th Indian Brigade, was assigned to hold Tobruk with a total of 14 infantry and five artillery battalions (with 104 field guns). Brigadier Willison's 32nd Army Tank Brigade was also kept within the Tobruk perimeter, with 65 infantry tanks (39 Valentines in 4 RTR and a mixed force of 26 Valentines/Matildas in 7 RTR). On paper, the garrison seemed adequate, although the South African division was not yet fully trained or equipped. Major General Hendrik B. Klopper, the South African division commander, was also made the garrison commander, on 14 May. Ritchie claimed that he could prevent the Axis from isolating Tobruk, with elements of XXX Corps still near El Adem-Belhamed, but these units were no longer fully combat capable. Messervy's 7th Armoured Division, now with the 4th Armoured Brigade (9L, 3/5 RTR and 6 RTR) and 7th Motor Brigade Group were ordered to conduct a mobile defence in the desert to block any German envelopment attempts. Once again, 'Jock Columns' were employed as screening units, dispersing British forces across the desert. Apparently forgotten, the KDG and 4 SAACR continued to patrol the empty Trigh el Abd between Bir el Gubi and the Egyptian frontier, instead of being used to monitor the Axis mechanized units.


A Grant tank burns, June 1942. Ritchie was profligate with his medium tanks and once they were expended, the game was up. (Author's Collection)

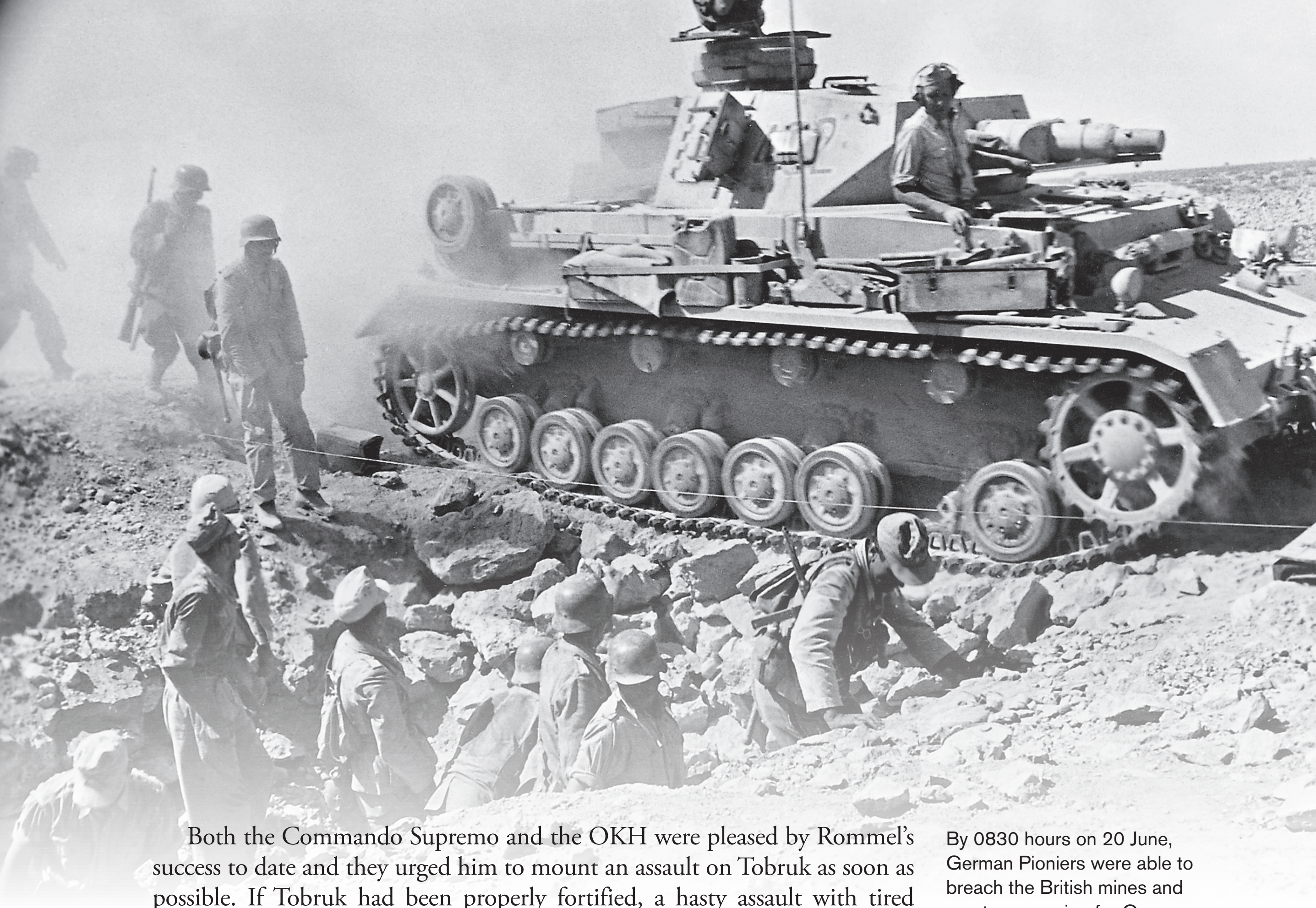
German Panzer III tanks from Panzer-Regiment 8 attack the eastern Tobruk perimeter on the morning of 20 June. British artillery fire is heavy but was unable to halt the German advance. (SDZ, 00333497)

Rommel's troops were exhausted, but continued to put in a sterling performance. With the British clearly in retreat, Rommel tried to swing wide around Tobruk in order to scoop up units and supply depots; von Bismarck's 21. Panzer-Division was sent toward Sidi Rezegh and Ed Duda, Kleeman's 90. leichte Afrika Division toward El Adem, and the Italian 'Ariete' to screen the open desert flank with several reconnaissance battalions. The next day, 16 June, the 21. Panzer-Division overran a single British infantry battalion at Sidi Rezegh and reached Ed Duda, but without armour support Kleeman's division was unable to reduce the two Indian battalions at El Adem. Nevertheless, Norrie decided to evacuate the box before it was isolated. By that point, the British had already dismantled the supply depot at Belhamed and destroyed over 47,000 tons of fuel. Due to lax British communications security, Rommel was well informed about British movements, which enabled him to manoeuvre with confidence.

Norrie's tactical command post was located about 8 kilometres east of Belhamed and from this position he could appreciate that Rommel intended to isolate Tobruk. On 17 June, Norrie ordered Messervy to commit the 4th Armoured Brigade (with a total of 90 tanks) to stop the German armour from pushing further east, which resulted in a sharp action. Initially, Lieutenant Colonel MacDonell's 9th Royal Lancers, with 34 tanks (including 12 Grants), were deployed along the escarpment, supported by two batteries of 25-pounders and one battery of 2-pounder guns. However, when a Panzer-Abteilung from the 21. Panzer-Division advanced with about 45 tanks around 1500 hours, the British artillery and anti-tank guns suddenly withdrew, leaving the 9th Royal Lancers without support. MacDonell opted to stand his ground and the Grants from B Squadron opened fire when the enemy tanks were at 1,500 metres, claiming six or seven German tanks as hit. However, the Germans began leapfrogging forward and brought up their anti-tank guns, which knocked out three Grants. British tankers were distraught to see trails of dust, left by high-velocity 8.8cm shells, skimming toward them just above the sand. As casualties mounted and the enemy closed to within 700 metres, MacDonell ordered a withdrawal. It proved difficult for Grant tanks to break contact, since when they turned to retreat, their sponson-mounted 75mm guns could no longer fire and their thinner rear armour was exposed. MacDonell ordered his CS tanks to fire smoke to screen the withdrawal, which helped, but the Grants in B Squadron took a beating.[48] The 5 RTR and 6 RTR were also engaged in the action before withdrawing. Altogether, the 4th Armoured Brigade had 32 tanks damaged or destroyed, while the Germans had about 15 tanks hit.[49]

While 4th Armoured Brigade still had 58 operational tanks, the formation had lost all effectiveness since it was comprised of composite units that found it difficult to work together on the battlefield. Although the British were repairing about 15 tanks per day, they were increasingly sending ad hoc teams into combat that had no cohesion and little effectiveness.[50] Lieutenant Stuart Hamilton, a troop leader in 8 RTR, recalled that at this point in the battle, it was common to be sent into action under squadron commanders he did not know and with troops from other regiments. Fratricide incidents increased, communication problems became endemic, supply malfunctioned and as a result, unit morale plummeted. Furthermore, most of the British tankers had been functioning on just three hours of sleep per night for nearly three weeks. Consequently, the remaining British armour had very little actual combat capability, so this action east of Sidi Rezegh was the tipping point that convinced Ritchie that he needed to pull his armour back to save it for the next battle. In the place of armour, Norrie decided to try to use the RAF to slow down Rommel, particularly with the new Hurricane IID fighter-bombers, equipped with two 40mm cannon. However, only a handful of these aircraft were available in a single squadron (No. 6 RAF) at Gambut airfield, along with some Boston (A-20) light bombers. While the RAF managed to mount about 30–40 ground attack sorties per day against the 21. Panzer-Division, this proved insufficient to stop the enemy armour.

After the tank action near Sidi Rezegh and the withdrawal of the 4th Armoured Brigade, the only force still blocking Rommel was two battalions of the 20th Indian Brigade at Belhamed. However, Norrie ordered this position evacuated on the evening of 17 June, just as the 21. Panzer-Division was approaching. In fact, mines proved more of an obstacle to the German vanguard, but by midnight on 17 June, a few armoured cars from A.A. 33 had reached the Via Balbia east of Tobruk and isolated the town. The airfield at Gambut and nearby supply dumps were also overrun before they could be destroyed. Meanwhile, most of the XXX Corps retired to the Egyptian frontier, where XIII Corps was hastily trying to establish some new defensive boxes. Once again, the 7th Armoured Division had been decimated (for the third time since December 1940) and Ritchie decided that it was time for Messervy to go – he was relieved of command on 19 June and replaced by Brigadier James Renton.



By 0830 hours on 20 June, German Pioniers were able to breach the British mines and create a crossing for German tanks over the anti-tank ditch. This time, the Afrika Korps breach operation was a model of efficiency. (SDZ, 00089834)

Both the Commando Supremo and the OKH were pleased by Rommel's success to date and they urged him to mount an assault on Tobruk as soon as possible. If Tobruk had been properly fortified, a hasty assault with tired Panzer-Divisionen might have proved to be a major mistake, but Rommel knew the garrison was disorganized and unprepared to fend off a major attack. He decided to use the assault plan his staff had prepared for December 1941, but not executed due to Operation *Crusader*. In a period of just two days, Panzerarmee Afrika was able to coordinate and assemble all the forces required to conduct a complex breach assault, involving both German and Italian forces – which was an impressive feat. For once, Rommel also played according to the norms of German operational doctrine, rather than just trying to improvise on the fly. He chose to make his *Schwerpunkt* (main effort) in the south-east corner of the Tobruk perimeter, in a sector guarded by the 11th Indian Brigade; a single Indian infantry battalion, the 2/5 Mahrattas, held the centre of this sector.

At 0520 hours on 20 June, over 100 Axis bombers and dive-bombers began attacking the sector held by the 2/5 Mahrattas; the dive-bombers went in first, followed by the level-bombers, then finally Bf-110s for low-level strafing. Altogether, the Axis airmen made a maximum effort and flew 757 bomber sorties on this one day, dropping over 365 tons of bombs. Several battalions of artillery also provided a preparatory bombardment. While the Indian defenders were suppressed, German Pioniers breached the obstacle belt with Bangalore torpedoes (*Rohrladung*), then filled in the anti-tank ditch with barrels filled with crushed stone.

Two battalions of German infantry assaulted across the ditch *à la* 1918 *Stosstruppen* style and by 0745 hours a wide breach had been made. Inadequate pre-battle coordination prevented the British artillery from providing the 2/5 Mahrattas with final protective fire, which meant the Germans were able to operate in the penetration corridor with relative impunity.[51] By 0830 hours, Hauptmann Kümmel led the first tanks from his I./Pz.Regt. 8 across the ditch and the Indian battalion was overrun by 0900 hours. The Italian XX Corps also attacked the perimeter, on the left flank of the DAK, with three battalions of infantry from the 'Ariete' division and 'Trieste' division. However, the Italian attack faced tougher resistance from the 2nd Battalion Cameron Highlanders and was unable to make any progress.[52]

By 0900 hours, Major General Klopper was aware that the outer perimeter had been breached and he ordered Brigadier Willison to use his tanks to mount a hasty counterattack to restore the situation. The key point was the road junction at King's Crossing, behind the so-called 'Blue Line' or inner defensive line. By 1200 hours, both Panzer-Divisionen with a total of more than 100 tanks were advancing directly towards King's Crossing. Willison's counterattack was badly organized and he failed to coordinate with the 201st Guards Brigade, which tried to employ some infantry and artillery as well. Reeves' 4 RTR made the main effort, with two squadrons of Valentines and a third in reserve, which confronted the armoured mass of the DAK near King's Crossing. Kümmel's Panzer-Abteilung advanced through the haze in wedge formation, with Hauptmann Wahl's battalion following. By the time that the slow-moving Valentines arrived, the Germans had already created breaches through the mines using mine detectors and eliminated a battery of artillery that was covering the minefield. The 4 RTR fought valiantly but in piecemeal fashion, and it was crushed, losing 33 of 39 Valentines. Willison also committed one squadron of 7 RTR (the other had been sent to block the 'Ariete' division), which was mauled. By 1330 hours, King's Crossing was in German hands and the Allied inner line had been penetrated. The DAK quickly split into two *Kampfgruppen*, with 21. Panzer-Division advancing north toward Tobruk while the 15. Panzer-Division advanced west toward Fort Pilastrino.

Near Tobruk's airfield, the 21. Panzer-Division encountered a detachment of four 3.7-inch (94mm) anti-aircraft guns, which were used *in extremis* as anti-tank guns. Unlike Luftwaffe Flak crews, British anti-aircraft crews were not trained to fight tanks, even though the 3.7-inch gun was capable of penetrating any German tanks. According to von Mellenthin, the British anti-aircraft guns 'knocked out several tanks' before they were overwhelmed. Despite the delay, the lead elements of the 21. Panzer-Division began entering Tobruk around 1800 hours and within an hour most resistance in the town had collapsed. The British did manage to destroy a considerable amount of fuel and other supplies in the port area, but the Germans captured at least 1,400 tons of fuel and 5,000 tons of food.[53]

Klopper managed to reach the headquarters of the 6th South African Brigade, which was intact, and maintained sporadic radio contact with 8th Army. As evening fell, Klopper still had ten infantry battalions and some artillery left, but no tanks. He informed Ritchie that he would attempt a breakout to the east, but this intent fell through due to lack of transport. Next morning, Klopper agreed to surrender the remaining garrison, although a few units held out for another 24 hours. However, the Axis had not deployed an air-tight perimeter around Tobruk, enabling an intrepid leader like Major Hereward M. Sainthill of the 3rd Battalion Coldstream Guards to lead a successful breakout with 387 men and reach the 4 SAACR, which escorted them to the Egyptian frontier. Otherwise, the bulk of the Tobruk garrison – roughly 33,000 troops – went into captivity. Approximately 1,000 British tankers and B-echelon and RAOC support personnel were among the prisoners, including Brigadier Willison and the commanders of the 4 RTR and 7 RTR. In addition, two tank workshops were lost in Tobruk, along with valuable tools and dozens of damaged tanks.

Rommel's breach and assault of the Tobruk perimeter on 20 June was a model of how to conduct such an operation and one of the few exemplary displays of inter-Axis cooperation on the battlefield. Although the Axis suffered significant losses in the final attack, Rommel would soon receive replacement tanks, and the capture of about 2,000 serviceable motor vehicles in Tobruk greatly enhanced the mobility of Panzerarmee Afrika.[54] The capture of Tobruk was Rommel's greatest military achievement and a masterful display of his dynamic front-line leadership style at its best. For Auchinleck, Ritchie and the 8th Army, the fall of Tobruk was a bitter blow that marked the nadir of the Desert War. Despite tenacious fighting by front-line troops, British senior battlefield command throughout the entire Battle of Gazala was abysmal; every advantage – the Grant tanks, overall numerical superiority and superior logistics – was squandered, with very little return on investment. After the loss of Tobruk, Ritchie was left with only the depleted 7th Armoured Division (with 92 tanks) and three infantry divisions (1 SA, 10 IN, 50) to defend Egypt against an enemy that had just bested a far-better-equipped force. On the morning of 21 June, Ritchie informed Auchinleck that he was withdrawing to Mersah Matruh, to form a defensive line there.

At the same time, Rommel ordered the lead elements of Panzerarmee Afrika to advance to the frontier. Just before the assault on Tobruk, Rommel had received additional special intelligence from the OKW's intercept of the compromised American 'Black' diplomatic cipher. Colonel Fellers, the US military attache in Cairo, revealed that the 8th Army had lost over 1,000 tanks and at least 40 per cent of its artillery in the Battle of Gazala, leaving just 133 tanks of all types in depots in Egypt.[55] Armed with this critical piece of intelligence, Rommel believed that the 8th Army was a broken force and that he had a brief window of opportunity to reach Cairo. As a result, Rommel decided to mount a hasty invasion of Egypt, even though the plan developed in early May specified that Panzerarmee Afrika was supposed to pause for six weeks after capturing Tobruk and shift to the defence of the Egyptian frontier. In the interim, the Luftwaffe would transfer its aircraft to support the invasion of Malta (*Unternehmen Herkules*). The capture of Malta would greatly reduce the ability of the Royal Navy and RAF to interdict Axis maritime lines of communication to North Africa, which would improve the ability to launch an offensive into Egypt.

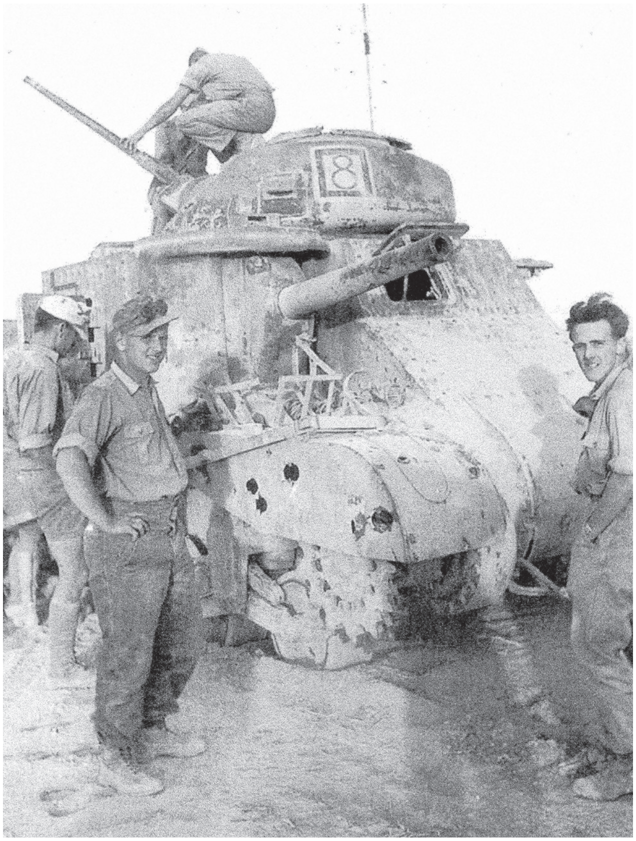
Ever the prima donna, Rommel mounted a hasty invasion of Egypt before the OKH and Commando Supremo could tell him to stop. Rommel ignored the logistic problems with pushing deep into Egypt and shrugged off efforts by Superasi to restrain his recklessness. Rommel not only argued with his superiors, but went behind their backs, directly to Hitler, to get his way. In Berlin, Hitler was ecstatic about the fall of Tobruk and immediately decided to promote Rommel to Generalfeldmarschall on 22 June. Hitler also liked a 'winner' and decided to side with Rommel on the question of invading Egypt, which essentially gave him a free hand.[56] Kesselring and the Commando Supremo were ignored, while *Unternehmen Herkules* was postponed, then later shelved. Of course, an invasion of Egypt meant that Panzerarmee Afrika would require a significant amount of replacement tanks and supplies, which would have to be deducted from resources allocated to the Eastern Front. Rommel regarded those issues as someone else's problem – not his.

Meanwhile, Rommel did not even give his exhausted troops a full day of rest before pushing them east to pursue the defeated enemy. Exhausted men can be pushed, although mistakes in judgment become more common, leading to increased casualties. Tanks, like horses, can only be pushed so hard before they drop out. The tanks in Panzerarmee Afrika desperately needed mechanical attention, but they would not get it. Consequently, Rommel would begin his invasion of Egypt with just 44 operational tanks in the DAK and 14 in the Italian XX Corps.[57] Nor would his quartermasters get any time to organize supplies for a great leap eastward. Rommel based his gamble almost entirely upon the dangerous assumption that he could maintain his advance by capturing British fuel dumps. Likewise, he made minimal effort to coordinate with the Luftwaffe, so his air support would be much reduced.

A pair of German Pz III medium tanks and an armoured car conducting screening operations in the desert, summer 1942. The tank commander on the closest tank is scanning the horizon for threats, but the swirling sand and dust limits visibility. Despite the open nature of the terrain, unexpected encounters were not uncommon. (Alamy, C45EE2)

After the fall of Tobruk, British armoured reconnaissance units conducted rearguard and delay operations to cover the retreat into Egypt. Here, the crew of a Humber Mk II armoured car watches for the enemy. (IWM, E15509)

As for the 8th Army, the fall of Tobruk did afford one positive result. By happenstance, Winston Churchill was in Washington, DC, at the White House, meeting with President Roosevelt on the afternoon of 21 June. When news of the fall of Tobruk arrived, Churchill was visibly shocked and President Roosevelt asked what the United States could do to help. Churchill immediately replied, 'Give us as many Sherman tanks as you can spare and ship them to the Middle East as quickly as possible.' President Roosevelt turned the request over to General George C. Marshall, who proposed sending Major General George S. Patton and the 2nd Armored Division to Egypt.[58] However, it would take time to assemble and ship a complete US armored division overseas (as well as its attendant support units), and Churchill and Roosevelt wanted immediate results. On 25 June, General Marshall proposed a more expedient approach of simply sending 300 M4A1 medium tanks and 100 M7 105mm self-propelled guns, along with a US Army training detachment, directly to Egypt.[59] Churchill accepted the offer, which meant taking equipment from US Army units in training as well as expediting production of the M4A1 tank at the Lima Ohio plant. The tanks were hastily assembled and moved by rail to New York City, where they were loaded aboard six ships, which departed as Convoy AS 4 on 13 July. In order to better protect the tank engines from sea water on the long voyage, all the engines were removed and loaded on one vessel, the brand-new C2 cargo ship SS *Fairmont*. Convoy AS-4 sailed on 13 July, but three days later the *Fairmont* was sunk by U-161 near Bermuda. In addition to taking all 300 tank engines to the bottom, the vessel was also carrying 51 M4A1 tanks and 32 M7s. Without the engines, the contents of AS-4 would be useless, so another vessel, the SS *Seatrain Texas*, was hastily



German soldiers examine a knocked-out Grant tank, 22 June 1942. Despite their 75mm gun, the Grant tanks suffered appalling losses in the Battle of Gazala, in large part due to tactical mistakes. (Author's Collection)

loaded with about 250 replacement tank engines (and 52 M4A1 and 25 M7) and sailed on 29 July. Eventually, convoy AS-4 reached Port Suez on 2 September and the *Seatrain Texas* three days later – just over ten weeks since Churchill made the request. A few more replacement tanks were sent on a follow-on vessel and by 5 September, 303 M4A1/M4A2 (Sherman) tanks and 93 M7 SP guns had reached Egypt.[60]

In addition to the US tanks (and nearly 200 combat aircraft with US crews), Ritchie was also due to receive additional Commonwealth reinforcements, which were en route from Syria and Palestine. The X Corps headquarters under Lieutenant General William G. Holmes would arrive at Mersa Matruh on 22 June, along with Major General Bernard Freyberg's veteran 2nd New Zealand Division. Holmes was one of the more experienced corps commanders in the British Army (considerably more than either Ritchie or Auchinleck) and Freyberg one of the best division commanders. Major General Alexander Gatehouse had been given command of the incomplete 10th Armoured Division in Palestine, which was stripped of its tanks in order to begin rebuilding Lumsden's 1st Armoured Division. Nevertheless, even with the arrival of some replacement tanks, the 8th Army on 22 June could barely muster 150 tanks – which Auchinleck judged inadequate for another fight with Rommel.

A British rearguard effort was fought near Fort Capuzzo on 22 June, where a composite squadron of Valentines from 8 RTR and some infantry tried to delay the vanguard of the 21. Panzer-Division. Lieutenant Stuart Hamilton was part of this rearguard, and while assisting another damaged Valentine, he received a lesson on the capabilities of the long 7.5cm gun on the Pz IV Ausf F2:

> We saw a Panzer Mark IV, which had a 75mm gun, about 1200–1500 yards away and so completely out of range for our wretched 2-pounder and we wondered what the hell it was doing… We soon learnt because as I was talking to Reg [Lieutenant Reggie Campbell] the bastard fired, and it was a splendidly accurate shot.

The round hit the lower hull of Hamilton's tank; both lieutenants were concussed, but survived. Hamilton remarked, 'It really was a magnificent shot and we were furious we could not retaliate.'[61]

Ritchie decided on a three-tiered approach to slowing Rommel in order to gain time to restore 8th Army to fighting trim. Gott's XIII Corps (7th Armoured Division, 29th Indian Brigade and five armoured car regiments) was expected to conduct a mobile delaying operation from the Egyptian frontier back to Mersah Matruh. Holmes' X Corps (1st Armoured Division, 50th Division, 2nd New Zealand Division, 10th Indian Division) would form a defensive position at Mersah Matruh, while XXX Corps (1st South African Division) would create a final defensive line at El Alamein. Ritchie also planned to lean more heavily on the RAF to slow the enemy, with more emphasis on ground attack missions, and additional Hurricane IIC fighter-bombers were sent to Egypt to support this effort. On paper, Ritchie's scheme of defence seemed reasonable, but it did not account for the ability of Panzerarmee Afrika to sustain a rapid advance into Egypt. Furthermore, behind the scenes, Auchinleck was planning to sack many of his commanders and had already informed Churchill that Ritchie and Norrie were going to be relieved as soon as was feasible.[62]

Before Gott could organize a covering force on the Egyptian frontier, Panzerarmee Afrika began crossing in force on the morning of 23 June and by evening had pushed 40 kilometres into Egypt. The RAF mounted 75 ground attack strikes against the Axis columns during the day, but proved unable to seriously interfere with the enemy. Gott had no confidence in his composite armoured units; the strongest formation was 6 RTR with 45 tanks (including 27 Grants), but the rest were comprised of individual squadrons and troops from different regiments. Regimental cohesion – the glue that held the British Army together – was lacking. Once it was clear that the Axis had crossed the border in force, Gott hastily ordered 7th Armoured Division to withdraw at 2030 hours. Thus the tankers of 4th Armoured Brigade spent the entire night of 23/24 June marching back over 100 kilometres to Mersah Matruh. In tanks, with exhausted crews, this is a nightmarish experience. Long columns of motor transport, with various support units, also retreated along the Via Balbia – which the over-extended Luftwaffe was unable to interdict. The one thing the British did well during their retreat was in demolishing their supply dumps and water stockpiles near the Misheifa railhead, of which very little fell into Axis hands.

After its initial lunge into Egypt, Panzerarmee Afrika spent much of 24 June virtually immobilized south-west of Sidi Barrani, waiting for fuel to be brought forward. In the interlude, the RAF escalated its level of effort by mounting 102 ground attack sorties – which were beginning to be painful. On 25 June, the advance continued against no opposition, aside from incessant air attacks. With much of his Luftwaffe support withdrawn after the fall of Tobruk, Rommel now had to get used to operating under enemy air superiority. On the same day, the Commando Supremo decided to authorize Panzerarmee Afrika to advance as far as El Alamein. In order to strengthen the Italian 20th Corps, Rommel requested that the Superasi allow the 133ª Divisione Corazzata 'Littorio' to join the advance and this was also authorized. Although the

Following major campaigns, both sides cleaned up the multitude of abandoned vehicles on the desert battlefields – often with grisly finds. Here, British soldiers remove the charred remains of a German driver from a knocked-out Pz IV. (IWM, E9986)

'Littorio' division had been in North Africa since January 1942, it had been continuously stripped of personnel and equipment to replace losses in the 'Ariete' and 'Trieste' divisions. Even when committed to the front in June, the 'Littorio' division only had a single medium tank battalion (LI Btgl. Carri M.) and was still deficient in support units. The troops in the division were relatively inexperienced, but its division commander Generale Gervasio Bitossi was one of the most experienced armour leaders in the Regio Esercito.

Meanwhile, Ritchie was planning on fighting another positional battle at Mersa Matruh, with the five infantry brigades of the X Corps ensconced behind a wide mine belt around Charing Cross. The British had been working on this fortified area since 1940 and although incomplete, it did have an anti-tank ditch, mines, barbed wire and some bunkers. However, the area to the south of Charing Cross was a stretch of open desert, bordered by an escarpment, with only minimal obstacles to hinder an enveloping attack. In order to protect this vulnerable southern desert flank, Ritchie adopted a similar scheme to that at Gazala – fixed infantry positions and an armour reserve. Ritchie wanted to deploy two brigades of Freyberg's 2nd New Zealand Division (the third was sent to El Alamein) forward on the southern escarpment to hold a strongpoint at Sidi Hamza, but Freyberg objected to this kind of die-in-place mission. Instead, Freyberg's New Zealand brigades were deployed further east at Minqar Qaim, and the 29th Indian Brigade was split up in three positions around Sidi Hamza, all under Gott's XIII Corps. As a mobile reserve, Gott relied on Lumsden's 1st Armoured Division, which now had Brigadier Arthur F. Fisher's 4th Armoured Brigade, Carr's 22nd Armoured Brigade and the 7th Motor Brigade. Lumsden had a total of 159 tanks (60 Grants, 80 Crusaders/Stuarts and 19 Valentines). The threadbare 7th Armoured Division and one Indian brigade were deployed even further south, along the Siwa track, to cover against the probability of an extended envelopment through the desert. Ritchie's dispositions at Mersa Matruh were unimaginative, leaving a large 20km-wide gap in the middle between his two corps and scattering infantry and artillery in small packets. Ritchie decided to cover this gap with just two Jock Columns from the 29th Indian Brigade – Gleecol and Leathercol (each consisted of one infantry company, one artillery battery and one troop of 2-pounder guns) – which were supposed to watch the thin minefields placed in the gap.

By the morning of 25 June, Kleeman's 90. leichte Afrika Division was less than 30 kilometres west of Mersa Matruh and the rest of Panzerarmee Afrika was not far behind. Fuel shortages and incessant RAF attacks slowed the Axis advance, but by the afternoon, Axis reconnaissance units had reached the vicinity of the British defensive position and Holmes alerted Ritchie that he expected an enemy attack the next day. Indeed, Rommel had decided to launch a hasty attack the next morning, even though he had minimal information on enemy strength and dispositions. After watching Ritchie deploy 8th Army for three days and acquiescing to his decision to make a stand there, Auchinleck panicked and suddenly realized that the 8th Army risked being surrounded at Mersa Matruh. At 1900 hours on 25 June, Auchinleck decided to relieve Ritchie of command and take personal command of the 8th Army. Instead of a defence, he now intended to fight more of a mobile delaying action at Mersa Matruh in order to preserve his forces, but he did not manage to get an order out to this effect to his subordinates until 0415 hours on 26 June. By this point, with enemy forces already on the horizon, it was too late to make any major deployment modifications and Auchinleck's precipitate action only added further confusion to an already unsettled 8th Army.

Rommel issued his attack orders on the morning of 26 June with only a hazy idea of enemy dispositions – particularly their tanks – so the initial movements begun in the afternoon were more akin to a meeting engagement. The RAF continued to pound Panzerarmee Afrika with air strikes and at 1300 hours they scored a major success against the Italian XX Corps, when Beaufighters conducted a strafing attack which caused the death of the corps commander (Baldassare), the corps artillery officer (Generale Guido Piacenza) and corps engineer officer (Colonel Vittorio Raffaelli).[63] At 1700 hours, Kleeman's 90. leichte Afrika Division began advancing toward the gap in the centre of the British line and quickly demolished Leathercol, taking 400 prisoners.[64] Advancing to the right of Kleeman's division, the 21. Panzer-Division (with 30 tanks) brushed aside Gleecol but had eight tanks disabled when it unexpectedly ran into another minefield. Reconnaissance identified some of the British positions around Charing Cross. Further south, the German 15. Panzer-Division and Italian XX Corps (now under de Stefanis) reached the vicinity of Sidi Hamza and clashed with a British battalion in a combat outpost position. By 1930 hours, the Axis advance halted, satisfied that the 8th Army's outer defences had been identified. While Panzer crews went into night leaguer, Pionier troops worked all night to create breaches through the minefields – with little interference from the British. Rommel now knew that 8th Army was weak in the centre, which he intended to exploit to the fullest.

At 0730 hours on 27 June, Panzerarmee Afrika resumed its advance and began pushing through gaps in the outer mine belt. The 90. leichte Afrika Division overran a British infantry battalion but was stopped by artillery fire from the 50th Infantry Division. Nevertheless, the 21. Panzer-Division, with just 23 tanks, three depleted Panzergrenadier battalions and three artillery batteries, plunged deep into the void in the British centre against minimal resistance, advancing over 30 kilometres, and by 0900 hours was in a good position to cut off the New Zealanders at Minqar Qaim. However, the 15. Panzer-Division, with just 16 tanks, advanced along the southern escarpment and unexpectedly bumped into the British 4th Armoured Brigade (1 RTR, 6 RTR, 8 RTR) around 0710 hours. Soon thereafter, the 22nd Armoured Brigade (3 CLY, 4 CLY, QB) moved to join the engagement, which meant that the 15. Panzer-Division was caught between two British armoured brigades which possessed nearly a ten-fold superiority in numbers of tanks. Oberst Eduard Crasemann, commander of the 15. Panzer-Division, quickly deployed Panzerjäger-Abteilung 33 (Pz.jg.-Abt. 33) to hold off the 22nd Armoured Brigade, while committing Pz.Regt. 8's meagre tank force and his 8.8cm Flak battery against the 4th Armoured Brigade. A protracted action ensued, lasting nearly four hours. The Germans admitted the loss of five Pz III tanks and several anti-tank guns but claimed 31 British tanks. Actual British tank losses were much fewer; the 6 RTR suffered five Grants destroyed and 8 RTR lost three Valentines.[65] The British brigades paused around noon to replenish, but the 15. Panzer-Division was still blocked and in a poor tactical position. Rommel ordered the Italian XX Corps to move up and support the 21. Panzer-Division with the 'Ariete' division, although the addition of roughly 20 M13/41 tanks did not improve the odds much. Of note, he ordered the 'Littorio' division (with 21 M14/41 tanks) to follow the 21. Panzer-Division in the centre, thereby reinforcing success.

The decisive decisions in the Battle of Mersa Matruh occurred in the space of a single hour, between 1100 and 1200 hours. Rommel, who was up front with Kleeman at this point, knew that the 15. Panzer-Division was in trouble but he also knew that both the 90. leichte Afrika Division and the 21. Panzer-Division were in an excellent position to exploit the breakthrough and encircle large parts of the 8th Army. This was one of the occasions where Rommel's leadership from the front really proved its worth, enabling him to seize the moment and adopt a bold course of action. He ordered Kleeman to skirt around the 50th Infantry Divisions positions and reach the coast road by evening, thereby isolating the X Corps. He also ordered von Bismarck to envelop the New Zealand brigades at Minqar Qaim. In contrast, Auchinleck had very poor situational awareness and could not see that the 8th Army was being attacked by an enemy with a very limited amount of armour; indeed, he greatly exaggerated the enemy strength and thought the Axis had about 200 tanks on the field.[66] Nor was Auchinleck aware that Lumsden's 1st Armoured Division was in an excellent position to defeat the 15. Panzer-Division. Instead, at 1120 hours, he issued an order to both corps commanders that at their discretion, they could disengage and fall back to Fuka, if hard pressed. In other words, Auchinleck left it up to his subordinates on whether to conduct a defence or a delay operation – which is the absence of leadership.

As a result of Auchinleck's confusing guidance, Lumsden's 1st Armoured Division began a fighting withdrawal around 1300 hours, even though the tank battle had gone fairly well. Gott arrived at Freyberg's headquarters but turned down his request for armour support (19 Valentines from 8 RTR) and talked openly about withdrawing. By about 1500 hours, von Bismarck's 21. Panzer-Division (now with 14 tanks) had outflanked Freyberg's New

Zealand division and dispersed a good deal of its motor transport, but a hasty assault was repulsed by fire from New Zealand artillery batteries. Freyberg immediately appealed to Gott at 1615 hours for support from Lumsden's 1st Armoured Division, but was nonplussed to discover that the British armour was already disengaging. By chance, one squadron of the 3 CLY from the 22nd Armoured Brigade did make a brief appearance, but the New Zealand anti-tank gunners mistook them for enemy tanks and destroyed one. In the desert, fratricide incidents of this sort were not uncommon, particularly when both sides used captured vehicles.

Freyberg's division was left in a serious position, but far from catastrophic, and the redoubtable commander began planning a fighting withdrawal to the east, hopefully with some help from Lumsden's armour. However, at 1655 hours, Gott informed Lumsden that 'It's over. The New Zealand Division no longer exists.'[67] Five minutes later, while trying to organize the breakout, Freyberg was seriously wounded by enemy artillery fire. Rommel was also aware from intercepted British radio traffic that 8th Army was beginning to withdraw and he ordered all his units to attack and pursue. Gott further exacerbated the situation by issuing a withdrawal order to his XIII Corps at 1920 hours, but failed to alert the X Corps or Auchinleck. Ten minutes later, X Corps communications to 8th Army failed and remained out for the next eight hours. Soon thereafter, Kleeman's division, with just 1,600 troops and no tanks, reached the coast road east of Gerawla, thereby isolating the X Corps in Mersa Matruh. Rommel used the Italian divisions to build blocking position around the X Corps, while preparing for a concentric attack on the isolated New Zealand division. Amazingly, in the span of about five hours, Rommel's weak Panzerarmee Afrika had isolated the bulk of the 8th Army and the remainder was in retreat.

During the night of 27/28 June, the two isolated New Zealand brigades managed to fight their way through the thin cordon of the 21. Panzer-Division, although losses of manpower and equipment were significant. However, Holmes' X Corps did not learn of the 8th Army withdrawal until the morning of 28 June, by which point his forces were truly surrounded. Although prevailing German doctrine favoured finishing off isolated enemy units – which was the point of manoeuvre – Rommel chose to use the DAK to pursue the retreating 8th Army towards Fuka, and he assigned the mission of reducing the British garrison in Mersa Matruh to the Italians. The 'Brescia' and 'Trento' divisions were adequate for blockading the X Corps, but lacked the firepower to reduce a strongly entrenched British force. Holmes organized a breakout on the night of 28/29 June, spearheaded by a few mobile units like Lieutenant Colonel Gerald Kilkelly's 8th Hussars. On the first night, Kilkelly's column reached the area near the German roadblock at Gerawla and then paused to regroup during the next day (amazingly, unmolested by the Germans, who were busy looting nearby supply dumps). At 2115 hours, Kilkelly gave the order to break out to the south of the roadblock and rendezvous at El Alamein. Under a full moon, the British column moved about 10 kilometres across the open desert without contact with the enemy, before sighting two large leaguers. The 8th Hussars tried to sneak past the leaguers but were detected and lashed with tracer fire. Of the 18 tanks (Stuarts and Crusaders) that started the breakout, only six survived this contact, and Kilkelly was captured. Even Rommel's *Kampfstaffel* was involved in the confused fighting during the breakout, with staff officers like von Mellenthin taking part in the chaotic melee.[68] Only a single Crusader tank reached British lines near El Alamein, with 20 exhausted survivors. Bits and pieces of the rest of the 8th Hussars staggered in, along with parts of the 50th Infantry Division and the 10th Indian Division, but as small groups, not as formed units. Both divisions lost most of their artillery in the breakout and retreat, which rendered them combat ineffective when they did reach El Alamein. While many crewmen from 8th Hussars reached Allied lines, most of the B-echelon mechanics were lost, which seriously impacted the ability to reform these decimated armour units. Meanwhile, about 6,000 personnel from the X Corps had been left behind in Mersa Matruh (along with about 40 tanks under repair) and they were captured when the town fell on 29 June.

Rommel's relentless pursuit kept the 8th Army on the run, with 21. Panzer-Division overrunning the 29th Indian Brigade at Fuka (1,600 prisoners were taken) on the evening of 28 June.[69] One of the lead units in the pursuit was Kampfgruppe Briehl, which had a handful of light Flak and anti-tank guns, plus two self-propelled Panzerjäger I tank destroyers. Most of the German wheeled transport consisted of captured British vehicles, which led to odd situations when German pursuers overtook retreating British columns. Since the Germans were also using a few captured tanks and armoured cars and the situation was highly fluid, there was plenty of room for mistaken identity on both sides. The British were able to evacuate some supplies and remove a few damaged tanks back to Alexandria, but vast quantities of supplies were hastily blown up or abandoned in the retreat. In particular, the 8th Army lost a great deal of its ammunition stockpile, including 512,752 25-pounder rounds, as well as a great deal of tank and anti-tank ammunition.[70] In particular, all of the composite 75mm AP rounds fabricated for the Grant tank were abandoned in the retreat, as well as many of their HE rounds.

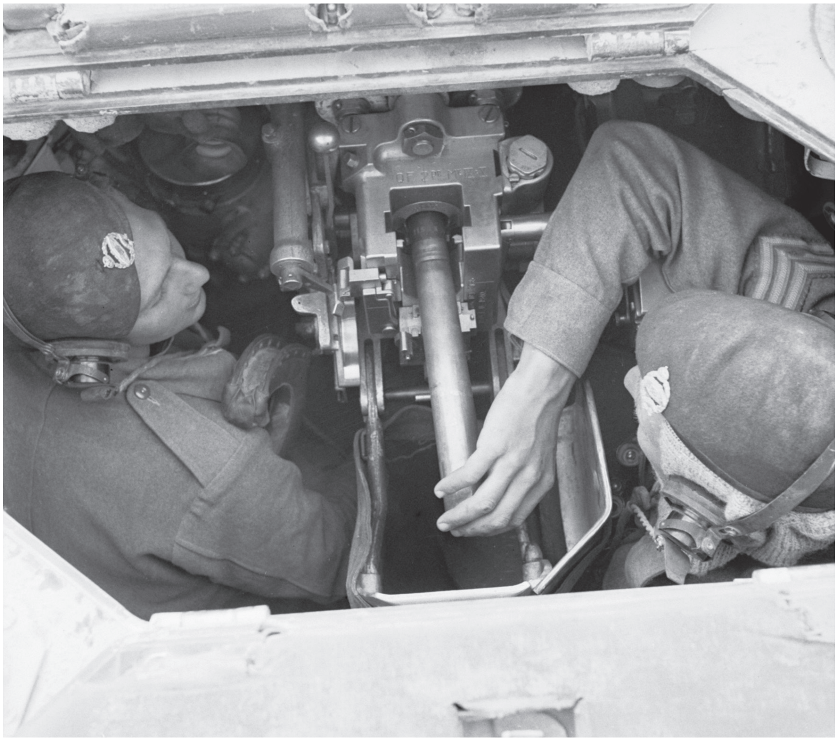
Yet as the Axis advanced deeper into Egypt, the Desert Air Force continued to escalate its battlefield interdiction attacks and RAF fighter-bombers badly shot up a column from Pz.Regt. 8, damaging four tanks (1 Pz II, 2 Pz III, 1 Pz IV). Normally tanks were not that vulnerable to strafing attacks, but this result was likely achieved by Hurricane IIDs armed with 40mm cannon. Nevertheless, Rommel was convinced that the 8th Army was disintegrating and could offer little resistance on the ground, so he pushed his exhausted troops to continue advancing, without pause. On 29 June, the DAK pushed east from Fuka, with Kleeman's light division moving rapidly along the coast road, while the two Panzer-Divisionen moved parallel to the road through the desert. Lumsden tried to fight a delaying action but the rapid pace of the

German advance ruined these plans and the results were chaotic. The 1 RTR, equipped with two squadrons of Stuart light tanks, found itself south of Fuka, bypassed by the DAK Panzer-Divisionen and out of fuel. Somehow, the regiment was able to escape eastward after some skirmishing with 21. Panzer-Division. After a spectacular advance of over 140 kilometres, Kampfgruppe Briehl reached El Daba at 2210 hours, with the rest of Kleeman's 90. leichte Afrika Division not far behind. By midnight, German patrols reached Sidi Abd el Rahman, just 24 kilometres west of El Alamein.

Rommel now ordered Generale Bitossi's relatively fresh 'Littorio' division to advance rapidly along the coast road toward El Daba and support the 90. leichte Afrika Division, while the 15. Panzer-Division was ordered to seize Ruweisat Ridge, about 16 kilometres south of El Alamein. Rommel had no solid intelligence on 8th Army dispositions, but expected to find only remnants of the X Corps ahead of him. For a brief moment, a decisive Axis victory in North Africa seemed possible. Lumsden's 1st Armoured Division was scattered helter-skelter west of El Alamein. Another rearguard that had been bypassed was A Squadron from 6 RTR and a composite squadron from the 8 RTR, near Bir el Tamar, southwest of Daba. At first light on 30 June, Bitossi's 'Littorio' division began advancing east, under the impression that the British rearguards had been swept away. Bitossi's vanguard consisted of 21 M14/41 tanks of Tenente Colonnello Salvatore Zappala's LI Btgl. Carri M., one squadron of L6 light tanks from the III Btgl. Carri L. 'Lancieri di Novara', the 12 ° Reggimento Bersaglieri and a small artillery detachment. Around 0800 hours, the Italian vanguard bumped into the British rearguard and Bitossi ordered Zappala's tank battalion to attack what appeared to be only ten enemy tanks. However, the British tanks also had some artillery and 2-pounder anti-tank gun support. Once again, British 2-pounders in hull-down firing positions proved superior to the inadequately protected Italian tanks; Zappala was mortally wounded and his battalion lost nine M14/41 destroyed and 11 damaged, plus three L60 light tanks destroyed. Colonnello Pietro Zuco, the commander of the 133º Reggimento Carri, was also wounded – making this a very painful action that left the 'Littorio' division with virtually no armour.[71] The British armour withdrew toward El Alamein during the afternoon with difficulty, after their fuel column was destroyed.

Rommel's intent to mount a hasty assault on Ruweisat Ridge on 30 June was undone by supply problems, a long sandstorm, relentless RAF ground attack sorties and various other frictions of war. The 3rd South African Brigade holding El Alamein spotted large enemy formations (the 90. leichte Division and 'Trento' division) approaching along the coast road and shelled them at long range, but there was no direct contact. Rommel had hoped to 'bounce' El Alamein before the British could establish a strong defence, but that was not possible, so he was forced to delay his attack until the next day, 1 July.

During the month of June, Rommel's Panzerarmee Afrika had achieved amazing success, pushing the 8th Army all the way back to El Alamein and inflicting great losses. However, by 30 June the armoured core of Panzerarmee



Loading the 2-pounder gun in the Valentine tank. Note how cramped the interior of the Valentine is and the awkward position required to load a shell into the breech. (IWM, E9766)

Afrika was rapidly diminishing and the 2,000km-long supply line back to Tripoli was stretched to the breaking point. Müller's Pz.Regt. 5 in the 21. Panzer-Division had just 24 tanks (including 15 Pz III short, six Pz III long and one Pz IV).[72] Teege's Pz.Regt. 8 in the 15. Panzer-Division had 17 tanks, while the 'Ariete' division had eight M14/41 and the 'Littorio' division had only one tank. While a number of tanks that had been recovered and repaired were heading to the front, Rommel had a total of only 41 German tanks and a handful of Italian tanks heading into the decisive action of the campaign. Furthermore, Rommel's knowledge of enemy dispositions in the El Alamein sector was negligible, which made it very difficult to effectively commit his limited armour at the critical point on the battlefield. On 29 June, the Allies finally recognized that the 'Black' diplomatic code had been compromised and switched to another, which deprived Rommel of his special intelligence at a critical moment.[73] Attacking into an intelligence void, with exhausted combat forces, no air support and shoestring logistics is a recipe for failure, but Rommel refused to recognize these factors and instead came to believe in his own genius as the ultimate arbiter of battle.

British battlefield command throughout June had been abysmal, resulting in many missed opportunities and repeated defeats. The retreat to the El Alamein position was a chaotic mess which left the 8th Army disorganized and demoralized. In particular, the British misuse of their armour had squandered the temporary technical advantage of the Grant tank and allowed the overall numerical superiority in tanks to be frittered away in piecemeal actions. Indeed, it was these repeated mistakes that encouraged Rommel to throw caution to the winds and advance deep into Egypt. Given that the 8th Army enjoyed a significant intelligence advantage through intercept and cracking of German Enigma signals traffic – which often provided advance warning of enemy intentions – the failure of British generals to make effective use of this resource in May–June 1942 is indicative of widespread incompetence. Auchinleck, Ritchie, Norrie, Gott, Lumsden and Messervy all bear personal responsibility for these defeats and, fortunately for the 8th Army, most would soon be out of the picture. British tank crews, while still capable of valiant resistance, were continually let down by the inability of their senior leaders to coordinate multi-unit battles.

RUWEISAT RIDGE: THE BREAKING POINT, JULY 1942

'Less than 100 miles to Alexandria!'

Rommel, 30 June 1942[74]

Although the 8th Army staff had sketched out a final defensive line at El Alamein in 1941, very little had been done to actually create fixed positions until the chaotic scramble from Tobruk began in late June 1942. In essence, the 'El Alamein line' reflected the same linear approach to warfare as employed in the unsuccessful 'Gazala line' – fortified defensive boxes garrisoned by infantry brigades, backed up by a mobile armoured reserve. Yet unlike the Gazala line, the El Alamein line could not be outflanked because there was no open desert flank in the south due to the Qattara Depression. Although not completely impassable for light vehicles, the high rocky escarpment surrounding the northern edge of the depression made it the ultimate 'no-go' terrain for tanks. With enough infantry, mines, artillery – and time – the 60km-wide expanse between the El Alamein box and the southernmost box at Naqb Abu Dweiss could be transformed into a robust defensive position. However, as the demoralized 8th Army retreated into the El Alamein positions, Auchinleck had very little formed infantry or armour remaining. Five weeks of fighting at Gazala and Mersa Matruh had cost Auchinleck 45 per cent of his troops, 85 per cent of his armour and 45 per cent of his artillery. By doctrine, Auchinleck needed at least five full-strength divisions (with 15 brigades) to hold a 60km-wide sector, but on 1 July he actually only had four infantry brigades in the line and five more reforming behind the line. Time to dig in and organize a proper defence was also lacking. Even if the four boxes could be made defensible, they were too widely spaced to be mutually supporting. Any mistakes made at this point could prove instantly fatal in the face of an aggressive opponent like Rommel.

Auchinleck anchored the northern end of the improvised line with the 3rd South African Infantry Brigade box around the El Alamein train station under the command of Norrie's XXX Corps. Virtually all of the 1st South African Division's divisional artillery was in the box, along with two regiments of medium artillery. However, the El Alamein box was laid out for a division-size unit and the brigade was only able to occupy 12 of 36 positions – the eastern side of the box was left completely undefended. The other two South African brigades, reduced to battlegroups (each with one infantry battalion, two artillery batteries and an anti-tank battery) after the retreat from Gaza, were reforming near Ruweisat Ridge.[75] The centre of the line was held by the Indian 18th Infantry Brigade at Deir el Shein and the New Zealand 6th Infantry Brigade at Bab al Qattara. The Indian brigade had been flown from Iraq to Palestine then hastily dispatched to El Alamein; it did not reach its assigned positions until the morning of 29 June. Along the way, the Indian brigade lost its commander and its artillery. The Indian and New Zealand brigades were each provided with 5,000 mines, but only a limited number of fuses and no Royal Engineers to ensure the mines were laid properly (this was roughly ten percent of the amount of mines the Free French brigade at Bir Hakeim had been provided). On the evening of 30 June, the Indian brigade was also provided with a significant amount of artillery (18 25-pounders), anti-tank guns (16 6-pounder and 12 2-pounder), as well as seven Matilda tanks from the 42 RTR, but there was no time to dig the guns in prior to the enemy attack.[76] In sum, the main part of the El Alamein line was occupied by just nine infantry battalions, which had less than 72 hours to prepare their defensive positions. The Allied line was exceedingly thin.

A Crusader tank from the 22nd Armoured Brigade moving rapidly, late July 1942. After months of heavy losses, the British armoured units during the First Battle of El Alamein were cobbled together from multiple regiments. (IWM, E14950)

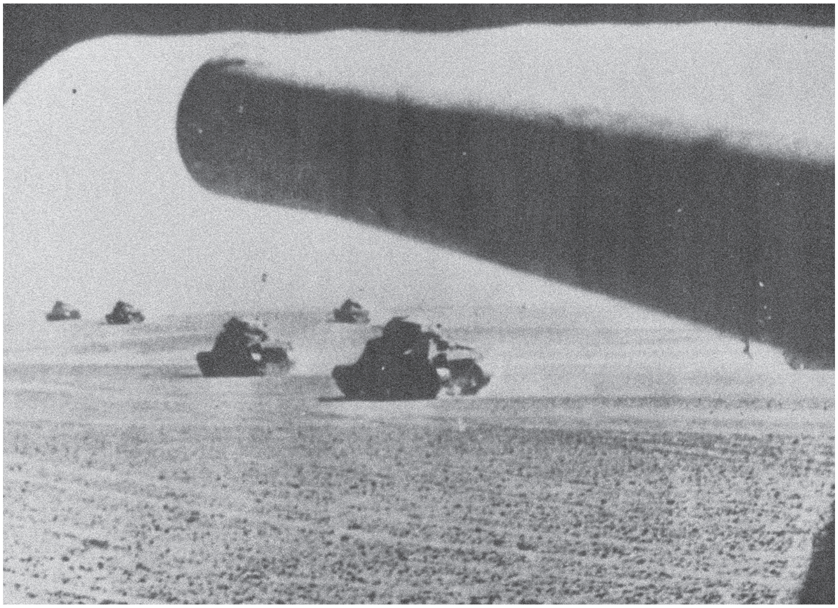
The key terrain in the line was Ruweisat Ridge, 19 kilometres south-west of the El Alamein train station. The ridge was narrow, running east-west, and was generally about 20 metres higher than the surrounding terrain (Point 64 was the highest elevation); not much of a terrain feature by European standards, but significant in the desert because it afforded better all-around visibility. In addition, an attacker could use the ridge to conceal their movements. Ruweisat Ridge was very rocky and covered by thin soil, which made digging in without engineer equipment almost impossible.

Gott's XIII Corps was responsible for the southern end of the El Alamein line, with the 9th Indian Infantry Brigade holding the southern box at Naqb Abu Dweiss. He also had Lumsden's battered 1st Armoured Division positioned near Ruweisat Ridge, but it was too disorganized to serve as a proper centralized armoured reserve. Of the 14 British armour battalions (regiments) in Egypt at this point, seven were virtually without tanks and had been withdrawn to refit at Alexandria. The other seven battalions had one or two squadrons at the front, with the balance also refitting. On 1 July, there were 902 tanks (including 100+ Grants) in the RAOC depot at Abbassia and nearby workshops, but only 34 were operational and the shortage of spare parts made it difficult to repair more. Another 42 repaired tanks were en route to the front, but Auchinleck had just 137 tanks at the front when Rommel arrived at the El Alamein line.[77] Only the 1 RTR and 6 RTR in Brigadier Fisher's 4th Armoured Brigade were close to authorized strength, but Carr's 22nd Armoured Brigade was a jumbled mess with composite squadrons from six different armour regiments. Heavy casualties suffered in the past five weeks, including eight battalion commanders and numerous squadron commanders, had also seriously weakened unit cohesion. Lumsden's 1st Armoured Division had most of the 8th Army's remaining armour, predominantly American-made: 38 Grant/Lee medium tanks (with limited ammunition), 61 Stuarts, 12 Valentines and eight worn-out Crusaders. However, Lumsden's division had very little remaining organic infantry or artillery, so it was virtually a tank-pure force. Major General Renton's 7th Armoured Division was in considerably worse shape, with no tanks, some armoured cars and two battalions of motorized infantry. Renton's division was assigned as a covering force in the south, just in case Rommel tried another wide envelopment. Another fundamental problem that made it difficult for the British armour to function as a mobile reserve was the chaotic nature of 8th Army tactical communications after the retreat. Gott was frequently out of touch with his units and Auchinleck and was barely aware of enemy movements, which made it very difficult to coordinate any kind of response. Indeed, Gott's command performance had been poor throughout the battles of Gazala and Mersa Matruh and was growing steadily worse. Yet Auchinleck seemed oblivious to Gott's command funk and, on the evening of 30 June, issued orders that XXX Corps would stop the imminent enemy advance and then XIII Corps would counterattack into the enemy's exposed right flank.

On the opposite side of the line, near Tell el Eisa, Rommel had determined to mount a hasty assault against the British positions, virtually from the line of march. He provided no time for his troops to rest prior to the attack or time for his reconnaissance units to identify Allied positions. As was his style, Rommel hoped to 'bounce' the British line before it was fully occupied and get into their rear areas, thereby precipitating a panicked flight back to Alexandria. His tactical plan was more direct than usual; Kleeman's 90. leichte Division and the 'Trento' division would skirt around the southern side of the El Alamein box and cut the coast road behind the South African brigade, while Nehring led the two DAK Panzer-Divisionen south of Miteirya Ridge to capture Ruweisat Ridge. Von Mellenthin's intelligence assessment was vague, entirely missing the 1st South African Division, and incorrectly assessed that the British had created a box at Deir el Abyad rather than Deir el Shein.[78] Panzerarmee Afrika had sufficient captured fuel to support one brief manoeuvre battle, but ammunition was in short supply and the Panzer crews and unit leaders were physically and mentally exhausted. Amazingly, the Luftwaffe was able to quickly deploy some fighters (JG 27 and JG 53) and Stukas (StG 3) forward to Fuka, so Rommel would have some air support, although the RAF's Desert Air Force was increasingly dominant. Rommel readily accepted battle under these terms, hoping for fortune to favour his desperate gamble.

At 0320 hours on 1 July, the 90. leichte Division began advancing in three small *Kampfgruppen* (Marcks, Menton, Menny), followed by the Italian 102ª Divisione Motorizzata 'Trento'. In the darkness, Kampfgruppe Menton (Sonderverband 288) became misoriented and bumped into the outer South African perimeter at 0605 hours, which provoked a large barrage of artillery fire. Kleeman tried to skirt around the South African positions, but by 0730 hours his division was pinned down and being pummelled by artillery. The South Africans also requested air support and by 1100 hours, RAF Boston (A-20) light bombers were relentlessly pounding the German columns. Meanwhile, Nehring's Panzers had advanced at dawn and discovered that there were no Allied units at Deir el Abyad. Pushing further east, German reconnaissance units discovered the Indian 18th Infantry Brigade position at Deir el Shein around 0645 hours. Given the 8km-wide gap between the South African box and the Indian box, Nehring could have bypassed Deir el Shein and pushed on to Ruweisat Ridge. However, Nehring decided to consult Rommel, who ordered him to assault the Indian position. Experience should have taught Rommel by now that assaulting enemy brigade-size positions was often a costly and time-consuming process, but his command abilities were apparently also worn down by exhaustion.

All infantry officers are trained about the significance of occupying dominant high ground – it is an enduring truth in ground warfare. Yet Auchinleck had positioned the Indian 18th Infantry Brigade in what was essentially a sinkhole in the desert, overlooked by higher terrain on virtually all sides, instead of on the high ground. Deir el Shein was a terrible place to deploy an infantry brigade. In any case, Nehring deployed his artillery – which



The view from the driver's position on a Grant tank, looking past the 75mm gun at a squadron moving across the desert. (Author's Collection)

consumed roughly three hours – and began bombarding the Indian position at around 1000 hours. Adding to Lieutenant Colonel Kenneth F. May's problems, two of the three infantry battalions in his brigade had no prior combat experience, the brigade had no organic transport and the attached artillery and anti-tank guns had very little ammunition. Recognizing that he was facing a large armoured force with an untried, poorly equipped brigade, May sent a coded signal to XXX Corps at 1100 hours requesting support, but the message was not decoded until 1700 hours.[79] Soon thereafter, the 21. Panzer-Division began manoeuvring to attack the north-east corner of the box, which was held by the 2/5th Essex Battalion. Although the German troops were hardened veterans, they only had 300 infantry and 20 tanks, so they were forced to advance methodically. Six German vehicles were disabled by mines before a gap was discovered. German Pioniers also blew another gap through the thin obstacle belt, which enabled tanks to advance directly into the 2/5th Battalion's position. Seven Matildas with composite crews from 42 RTR tried to stop the German tanks, but all were quickly knocked out. By late afternoon, the fighting inside the Deir el Shein box intensified as the Germans tried to mop up positions, but the British guns fought it out, firing at point blank range. Six German tanks were knocked out by the 25-pounder guns of the 275th Battery under Major William Paul and several more by the 6-pounder guns.[80]

While the 21. Panzer-Division was preoccupied with reducing the Indian 18th Infantry Brigade, Nehring directed the 15. Panzer-Division to continue advancing toward Ruweisat Ridge. Like the British, the Germans were forced to combine their remaining armour into composite units and Hauptmann Johannes Kümmel led a mixed company with the division's remaining Panzers.

A British airstrike managed to disable three of Kümmel's Pz IIIs, leaving him with just 14 tanks. Although Norrie ignored the plight of the Indian 18th Infantry Brigade, at 1330 hours he ordered Lumsden to commit his armour to assist the South African 3rd Infantry Brigade box. Unfortunately, Fisher's 4th Armoured Brigade was unable to respond because the 1 RTR was immobilized without ammunition or fuel and a number of the brigade's vehicles were bogged down in soft sand. Lumsden then directed Carr's 22nd Armoured Brigade to advance and by 1630 hours a small British armoured force was moving toward the battle area. Eventually, the British became aware that the Indian brigade was under heavy attack and the 22nd Armoured Brigade moved toward Deir el Shein, along with a few Stuarts from the 1 RTR. Kümmel spotted the approaching British tanks around 1800 hours and used smoke to screen his own movements; he deployed ten tanks in reverse slope-firing positions while one platoon with four tanks moved to flank the enemy. In essence, Kümmel employed an 'L-shaped' ambush. The 22nd Armoured Brigade apparently moved straight into the engagement area and Kümmel opened fire at a range of just 400 metres. The Germans claimed 12 Grant tanks destroyed and two Stuarts from 1 RTR were also knocked out, for the loss of one Pz III. At dusk, the British armour saw hundreds of Indian troops retreating from the Deir el Shein box and regarded their mission as completed, so they opted to withdraw. It was during this retrograde movement that Lieutenant Colonel Francis G. B. Arkwright, commander of the 4 CLY, was killed by an enemy AP round. The 22nd Armoured Brigade admitted the loss of four tanks but claimed eight German tanks destroyed.[81] Whatever the actual casualties, the British armour had failed in its mission to support the forward defensive boxes.

Once the British armour withdrew, the Germans continued to pound the Indian 18th Infantry Brigade into submission. Heavy fighting continued until 1930 hours, when May and about 2,000 of his troops surrendered, but some British troops did escape, including part of a Gurkha battalion. The action at Deir el Shein cost the 21. Panzer-Division 18 of its 22 tanks, although many were probably repairable. Far more serious was the loss of an entire day fighting three isolated Allied infantry battalions that were in a hopeless position. Rommel had allowed this Hougomont-style action to continue because he had spent most of the day trying to re-energize Kleeman's 90. leichte Division. Rommel and his chief of staff got too close to the action and spent two hours in the afternoon pinned down in the open under artillery fire, unable to communicate with the rest of his army. The South Africans pounded Kleeman's division with seven batteries of artillery and over 50 bomber sorties, causing the unit to fall back in panic around 1530 hours. By the end of the first day, Rommel had destroyed one of the 8th Army's boxes but had failed to reach Ruweisat Ridge, and only the 15. Panzer-Division was still capable of continuing the offensive.

On 2 July, Rommel resumed his attack at 0400 hours, with Kleeman's 90. leichte Division trying to slip between the El Alamein box and Ruweisat

Crusader tank crews sleep beside their tanks. Oddly, there does not appear to be any local security – in forward areas, at least one crew member should be awake for radio watch and look out for signs of the enemy or sandstorms. (IWM, E16262)

Ridge. However, the battlegroup from the South African 1st Infantry Brigade occupied a hasty defensive position on the northern slope of Ruweisat Ridge, known as 'the Hotbox', which blocked Kleeman's advance. Once again, the 90. leichte Division was stopped by concentrated artillery fire from the South Africans and bombed all day long. Major General Pienaar, commander of the 1st South African Division, appealed for armour support, which Norrie rejected.[82]

Nehring's DAK spent a good part of the morning mopping up and reorganizing around Deir el Shein. In the interim, Major General Ramsden, commander of the 50th Infantry Division, organized several *ad hoc* columns and dispatched them toward Ruweisat Ridge to serve as blocking detachments. The most significant was Brigadier Robert P. Waller's 'Robcol', comprised of a very mixed bag of artillery, anti-tank guns and just one company of infantry. Ramsden sent Robcol to Point 63 on the west side of Ruweisat Ridge, and a similar group known as 'Ackcol' was nearby. By 1000 hours, the 15. Panzer-Division resumed its advance eastward but quickly bumped into Robcol, which touched off a protracted duel with the 25-pounder guns on the ridge. Initially, Nehring only committed his infantry to try to pry the British gunners out of their positions, without risking his tanks, but they were easily repulsed by artillery fire. Eventually, around 1500 hours, Nehring tried to mount a combined arms assault with infantry, tanks and artillery support. Robcol was hard-pressed, suffering over 100 casualties and many of their guns knocked out, but the combination of 25-pounder and 6-pounder fire prevented Nehring's Panzers from getting closer than 1,000 metres and they suffered at least three tanks disabled. Waller called for armour support but, unknown to him, Norrie's XXX Corps had issued an order 'not to risk the remaining Grant tanks'.[83] Elements of the 22nd Armoured Brigade did arrive around 1700 hours, but only with Stuart light tanks, and after an ineffectual long-range duel with the 15. Panzer-Division, they withdrew. Robcol remained under constant attack until 2130 hours, when Nehring finally broke off the action.

Meanwhile, Fisher's 4th Armoured Brigade spent an extremely unproductive day, moving hither and yon based on sighting reports. At 1300 hours, Fisher was informed that Rommel and '2,000 vehicles' had been sighted near the New Zealand box at Bab al Qattara, which precipitated a mad dash by the 6 RTR to the south-west (8 RTR remained near Ruweisat Ridge) – away from the critical sector at Ruweisat Ridge. This mistake was likely caused by Axis deception efforts, which tried to convince Auchinleck that some forces were swinging to the south. When the 4th Armoured Brigade finally turned around and returned to Ruweisat Ridge, the 6 RTR unexpectedly bumped into a battery of 8.8cm Flak guns at 1530 hours and lost five Grant tanks destroyed. The 8 RTR was also briefly engaged, losing four Valentines.[84] Thus, the 8th Army's centre had been held by its artillerymen and a large helping of RAF air attacks, with little effective help from its armoured units.

Although the Luftwaffe provided some support to Panzerarmee Afrika, including some Stuka attacks on the El Alamein box, the RAF was dominant in the skies. The Italian 'Trieste' division was particularly hard hit, with 60 of its vehicles knocked out by air attack.[85] Even von Mellenthin noted that 'the Desert Air Force ruled the battlefield'. Indeed, this was the first occasion where Wehrmacht forces had faced enemy air attacks that were significant enough to impair their tactical mobility.

By the end of 2 July, it was apparent that Rommel's attempt to 'bounce' the El Alamein line had failed and that the Axis offensive into Egypt had culminated. The Axis troops were physically in very poor condition, suffering from exhaustion due to weeks without adequate sleep. Due to RAF air attacks, very little food and water was reaching the front-line units, so troops were forced to subsist on minimal rations. Combined with daytime temperatures in July that could reach 50°C (122°F), at least one-third of the Afrika Korps troops were suffering from various desert illnesses, which greatly reduced their physical and mental abilities. Likewise, even the 'operational' German tanks were in poor mechanical condition, having advanced nearly 700 kilometres from Tobruk on their own tracks, with no pause for maintenance (on 2 July the Panzer-Werkstatt Kompanie had not even reached the front). However, Rommel refused to admit failure or that his troops had reached their limit, and he ordered more attacks for the next day. While Nehring's depleted DAK would make another attempt to break through the 'Hotbox' and Robcol positions, both 'Ariete' and 'Trieste' divisions from the Italian XX Corps were ordered to swing south and occupy the Alam Nayil Ridge (to isolate the XIII Corps), as well as protect the right flank of the DAK.

Although the 'Ariete' division began moving during the night of 2/3 July, due to a communications lapse the 'Trieste' division failed to receive the order to move. Generale de Stefanis, the XX Corps commander, did not notice this mistake and failed to properly supervise the 'Ariete' division's night movement, which became somewhat scattered. When dawn arrived, the 'Ariete' division was on its own, with no nearby Axis units. Around 0715 hours, the division was spotted in the open 6 kilometres north of Alam Niyal and four New Zealand 25-pounder batteries from Brigadier Stephen Weir's column began bombarding it. The Italians were soon under attack from several directions and the 132º Reggimento Carri only had six operational M14/41 tanks. Weir requested infantry support and two battalions of the New Zealand 4th Infantry Brigade were trucked forward to lead a counterattack around 0915 hours. Caught in the open under heavy bombardment and with infantry closing in, much of 'Ariete's' divisional artillery was overrun and the 8° Reggimento Bersaglieri was mauled. The remainder of the 'Ariete' division retreated in disorder, having lost 531 men, 36 guns (including six 8.8cm and one 90mm), one tank and 55 motor vehicles.[86] De Stefanis contributed to this defeat through poor command and control, but Rommel had tasked the Italian XX Corps with two separate missions when they barely had the resources to conduct a single one.

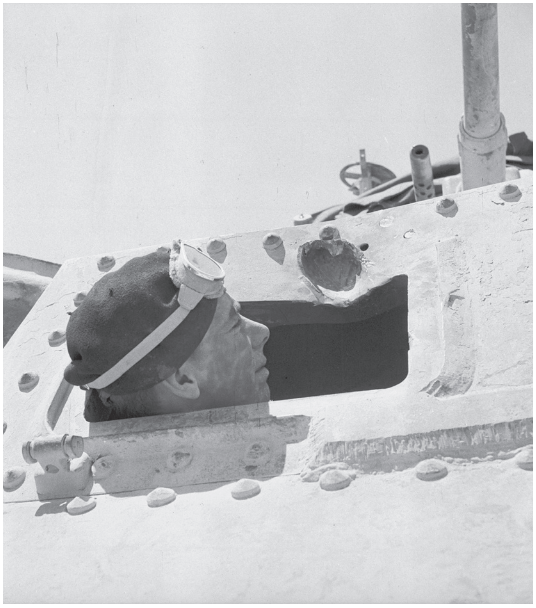
While Rommel was livid about the defeat of the 'Ariete' division, Nehring's DAK had not fared much better. The two Panzer-Divisionen pushed against Robcol but made no progress in the morning. Rommel requested close air support and a *Staffeln* (squadron)-size dive-bombing attack was mounted at 1535 hours, followed by another at 1835 hours. However, Allied fighters shot down at least five Stukas (they claimed a total of 20). Intense air battles raged over Ruweisat Ridge during most of the day, with the RAF conducting no fewer than 780 sorties (altogether, the RAF lost 19 fighters on this day, against 10+ Axis aircraft).[87] Nehring relied on his artillery and the Stuka attacks to gradually pressure the South Africans to evacuate the 'Hotbox' and force Robcol to pull back. As dusk approached, Nehring's remaining 26 Panzers lunged forward along the rocky slope of Ruweisat Ridge until they encountered Carr's 22nd Armoured Brigade. Robcol's delaying action had provided time for two squadrons from MacDonell's 9th Lancers to join the 22nd Armoured Brigade on the central portion of Ruweisat Ridge. Carr now deployed two squadrons of the 9th Lancers (with 12 Grants and 12 Crusaders) and C Squadron from the 4th Hussars (12 Grant/Lee), reinforced by C Squadron 6 RTR (Grants/Stuarts) and 8 RTR (Valentines) from the 4th Armoured Brigade. The result was a linear meeting engagement, fought at twilight. The British tankers suffered heavy losses, particularly from German 8.8cm long-range fire and artillery bombardment; Lieutenant Colonel James Compton, commander of the 8 RTR, had his arm blown off by artillery shrapnel. Lieutenant Colonel Henry M. Liardet's 6 RTR lost another four Grants. However, the British claimed at least 12 German tanks knocked out and set afire, which completely blunted Nehring's attack.[88] The German forward units were now dangerously exposed and running very low on ammunition. At 2010 hours, Rommel issued a halt order and told his units to begin digging in on the ground captured.

Different interpretations have been offered for this critical moment in the campaign. Correlli Barnett concluded that Auchinleck's skill as a commander was the main cause of Rommel's failure to achieve a quick breakthrough on Ruweisat Ridge.[89] Barnett's descriptions of Auchinleck's performance border on the hagiographic and ignore the contributions of the junior commanders and men who actually fought the battle; it was Ramsden who decided to deploy Robcol at the critical point on the battlefield, not Auchinleck, and the New Zealand counterattack against the 'Ariete' division was caused by a snap decision made by Brigadier Weir. Indeed, Barnett's interpretation is typical of the simplistic top-down approach to military history, which focuses on the behavior of generals, not the myriad of other factors that shape the outcome of modern warfare. To claim, as Barnett does, that Auchinleck defeated Rommel through superior willpower and 'clever tactics' is to ignore the fact that 'the Auk' was using the same methods that proved unsuccessful at Gazala and Mersa Matruh. Similarly, Niall Barr's conclusion that the 8th Army used 'a truly all-arms defence to blunt Rommel's attack' and lauding of the British use of 'unorthodox but sensible tactics' is to ignore the fact that clumps of semi-broken Allied units were dumped into the El Alamein line and then forced to conduct die-in-place missions with little or no prior planning.[90] Using field artillery to stop tanks, like Robcol, was a desperate expedient for the British Army, not 'sensible tactics'. Barr's claim that 'Robcol vindicated Auchinleck's new policy of mobile brigade groups' is patently absurd in that Robcol was not very mobile, not a brigade and was incapable of offensive manoeuvre, like a true mobile brigade group. Furthermore, the Dominion division commanders refused to employ the brigade group scheme, fearing that Auchinleck would use it to detach their brigades from parent divisions.

Churchill's recurrent criticism of Auchinleck, that he had 750,000 men under his command in the Middle East, many of whom were not fighting, contains more than a grain of truth. As a theatre commander, Auchinleck badly mismanaged personnel and resources. Auchinleck had not only failed to maintain some kind of operational reserve in Egypt, but he had shuffled valuable combat units off to backwaters like Cyprus, Palestine and Iraq. The 9th Australian Division and Gatehouse's 10th Armoured Division had been cooling their heels in Syria-Palestine for the better part of a year. Auchinleck had also consistently broken up new formations sent from England, beginning with the 2nd Armoured Division (May 1942) and then the 8th Armoured Division (gradually broken up between July and September 1942), in order to employ them as brigade groups. During Operation *Crusader*, Auchinleck allowed his front-line commanders to burn through 800 tanks in five weeks, then another 1,000 tanks during June and July 1942, without having the reserves in hand to replace them. With better management, the 8th Army could have had three reasonably fit armoured divisions in the field by mid-1942, enabling units to rotate to the rear to refit. It was also Auchinleck's decision to give the critical mission of holding El Alamein to Norrie's XXX Corps, even though he was planning to relieve Norrie. Holmes and his X Corps staff would have been a far better choice to organize the El Alamein line, rather than a commander like Norrie who had been making one mistake after another since Operation *Crusader*.

Rommel was stopped on Ruweisat Ridge by three factors unrelated to Auchinleck's command skills: the British and South African artillerymen, relentless RAF air strikes and his own hubris. If the artillery had not slowed down the DAK advance on 1–3 July, Nehring's Panzers would have captured most (if not all) of the ridge before Lumsden could organize his armour. As it was, the piecemeal commitment of British armour into the fighting on Ruweisat Ridge was typical of the kind of mistakes made during the Battle of Gazala. Had the Desert Air Force not committed itself to a maximum effort on battlefield interdiction – which was not part of its pre-war doctrine – Panzerarmee Afrika would have been able to conduct the kind of manoeuvre warfare in which it excelled. Relentless air and artillery bombardments deprived the Germans of their tactical advantage in mobility at a crucial moment. Without manoeuvre, Panzerarmee Afrika was reduced to a slugging match that it lacked the resources to win. It was Rommel who put Panzerarmee Afrika in this predicament, not the OKH, Hitler nor the Commando Supremo in Rome. By advancing deep into Egypt with such inadequate forces and logistics, Rommel was trusting to luck and risking the utter destruction of Panzerarmee Afrika. Even if somehow Nehring had broken through the El Alamein line, Panzerarmee Afrika lacked the residual strength to occupy the entire Nile delta and mop up hundreds of thousands of Allied military personnel in the region.

After Rommel's effort to complete the capture of Ruweisat Ridge was halted, skirmishing continued around the position for the next week. On 4 July, the 4th Hussars committed its C Squadron, with 12 Lee/Grants under Major Thomas I. Taylor, and 6 RTR committed one of its squadrons to a protracted long-range gunnery duel with the 21. Panzer-Division. The British claimed six enemy tanks and two 8.8cm guns knocked out, but Major Taylor was killed in action. Thereafter, both sides pulled most of their remaining armour back to refit, while using infantry and artillery units to hold their front-line positions. Rommel deployed the Italian XXI Corps to hold the northern end of his line around Tell el Eisa (with a total strength of 11 infantry battalions and two artillery regiments) and the Italian X Corps to dig in on Ruweisat Ridge (with a total of six infantry and three artillery battalions). The DAK and the Italian XX Corps were pulled back around Deir el Shein, while the southern end of the line was screened by two German armoured reconnaissance battalions. Rommel made an urgent appeal to Rome and



The driver on a Grant tank examines a 5cm shell hit above his position. The projectile has torn off the driver's hatch and warped the frame. (IWM, E13261)

Berlin for more tanks, infantry replacements and fuel.

On 7 July, Auchinleck finally relieved Norrie of command and put Ramsden in charge of the XXX Corps. One brigade of the Australian 9th Division arrived from Syria and was sent to reinforce the defences on Ruweisat Ridge, with the rest of the division to arrive soon. Auchinleck also knew that the 8th Armoured Division would arrive at Suez in a few days, which would partially replenish his armoured force. In the interim, Auchinleck sought to conserve his remaining armour, although he was eager to conduct an active defence by using night infantry attacks, particularly against the Italians. At 0330 hours on 10 July, two battalions from the Australian 9th Division conducted an attack against the Italian XXI Corps positions near Tell el Eisa, preceded by a two-hour artillery bombardment from over 100 guns. The Italian 'Sabratha' division was caught off-guard and badly mauled, but the effort by the 44th RTR to support the attack failed when its 32 Valentines bogged down in a salt marsh. The Australians also succeeded in destroying Rommel's radio intercept company, which seriously degraded his intelligence collection efforts against 8th Army tactical communications. Altogether, the Italian XXI Corps lost 1,870 troops and 30 artillery pieces. Nevertheless, the Australians were vulnerable without tank support, and they were forced to give up some ground when the 15. Panzer-Division and the XI Btgl. Carri M. from the 'Trieste' division mounted an afternoon counterattack with about 30 tanks.[91] Fighting continued near Tell el Eisa on 11 July, with company-size tank engagements, but few casualties on either side.

Rommel tried to throw some punches of his own, but they came to naught. The 21. Panzer-Division and 'Littorio' division moved against the Bab al Qatarra box on 8 and 9 July, but discovered that the New Zealanders had evacuated this exposed position one day before. On 13 July, the 21. Panzer-Division tried to conduct a combined arms attack with Stuka support against the El Alamein box, but the South African artillery once again prevented any advance. An armoured attack at Tell el Eisa on 14 July did force the Australians to relinquish some of their gains, but not much. The vulnerability of the Italian front-line units forced Rommel to disperse his armour, with 21. Panzer-Division back-stopping the XXI Corps in the northern sector and the 15. Panzer-Division supporting the X Corps on Ruweisat Ridge. During the first two weeks of July, Rommel only received a trickle of personnel and equipment to replace his losses, including a German infantry battalion flown in from Crete and seven repaired tanks for Pz.Regt. 8.

Buoyed by the success at Tell el Eisa, Auchinleck was eager to conduct more limited attacks in order to put stress on Panzerarmee Afrika and to boost morale in the 8th Army; his tactic of choice was brigade-size infantry attacks, conducted at night. The 8th Army staff developed a plan, dubbed Operation *Bacon*, to mount a surprise attack against the Italian X Corps on Ruweisat Ridge on the night of 14/15 July, using two New Zealand infantry brigades from Gott's XIII Corps and the 5th Indian Brigade from Ramsden's XXX Corps. Once Ruweisat Ridge was captured, Lumsden's 1st Armoured Division was supposed to advance to support the infantry against any German armoured counterattacks. Pre-battle coordination between XIII and XXX Corps was minimal, particularly involving the role of the 1st Armoured Division. Operation *Bacon* began at 2330 hours on 14 July and the New Zealand 4th and 5th Brigades succeeded in overrunning one Italian battalion from the 'Brescia' division and infiltrated into the depth of the Italian position on Ruweisat Ridge. The Indian 5th Brigade, advancing from east to west along the ridge, also made inroads into the 'Pavia' division sector before halting. During the night, the New Zealand infantry also stumbled upon a leaguer from Pz.Regt. 5 on the ridge, inflicting some casualties, and forced it to withdraw, under fire. By dawn, the New Zealanders had occupied a considerable portion of the rocky ridge, but their tactical communications broke down and the two brigades were scattered. Furthermore, pockets of Italian resistance remained as well as uncleared minefields, which prevented the New Zealand anti-tank and artillery units from linking up with their infantry battalions.

At dawn on 15 July, Nehring recognized that the British threatened to break through the Axis centre and reacted quickly. Hauptmann Wolfgang Wahl led a counterattack at 0515 hours with just eight tanks, which caught the New Zealand 22nd Battalion in the open. Wahl's Panzers quickly destroyed four 6-pounder guns mounted portee and then forced the rest of the battalion (275 troops) to surrender.[92] Due to communications failures, the New Zealanders had difficulty alerting XIII Corps headquarters of their plight (once again, Gott was oblivious to the predicament of his front-line units), and Lumsden would not advance until he received confirmation that the New Zealanders had actually seized their objectives. After the commander of the 5th New Zealand Brigade made a direct plea to Briggs' 2nd Armoured Brigade (6 RTR, 3/5 RTR, 9L), the British armour did advance at 0700 hours, but stopped when it encountered mines and had several tanks damaged. Despite the fact that the New Zealanders stated that they were being attacked by enemy tanks, the British armour showed no urgency throughout the day. Instead of pushing through to link up with the infantry, Briggs' brigade was content to shell some isolated Italian positions and collect several hundred prisoners. Lumsden briefly appeared, told the New Zealand brigadier that the armour 'would move as soon as possible', then drove off.[93] Meanwhile, after assembling a more sizeable counterattack force from the 15. Panzer-Division, a tank company from the 'Littorio' division, Kampfgruppe Baade from 90. leichte Division and two reconnaissance units (A.A. 3 and A.A. 33), Nehring attacked the 4th New Zealand Brigade around 1615 hours under cover of a light sandstorm. Hauptmann Roland-Heinrich von Hößlin, commander of

Panzer-Aufklärungs-Abteilung 33 (formerly A.A. 3), led the counterattack until he was badly wounded. Hauptmann Detlef Lienau then took command of the reconnaissance unit and pressed the attack, with his armoured cars and SPW halftracks closing with the enemy around Point 63. All of the New Zealand anti-tank guns were mounted portee because they could not be dug into the rocky soil, so they were quickly spotted and destroyed. German artillery fire also pounded the 4th New Zealand Brigade, which was overrun by 1730 hours; the bulk of the 19th and 20th Battalions were forced to surrender. Nehring did not send his tanks and pitifully small infantry force (about 300 German infantry) forward until New Zealand resistance was broken. As the survivors of the broken brigade fled eastward, they were dismayed to find the 2nd Armoured Brigade sitting immobile less than 2 kilometres away.[94] Altogether, the New Zealanders suffered 1,405 casualties, while the two Italian divisions lost over 2,000 troops on Ruweisat Ridge.[95]

By the time that the British armour did try to intervene, the 4th New Zealand Brigade had already been crushed and dusk was falling. One squadron from the 9th Lancers engaged in a long-range gunnery duel and claimed one Pz III destroyed. Elements of the 22nd Armoured Brigade (3 CLY, RSG) also appeared, which marked the combat debut in North Africa of the Royal Scots Greys (RSG). A Grant tank from the 3 CLY was destroyed by a lucky 7.5cm AP hit from a Pz IV Ausf F2. Soon afterward, both sides pulled their armour back. Nehring was incredulous that the British armour had failed to support their infantry, as were the New Zealanders. Lumsden and Briggs claimed that their instructions for supporting the infantry in Operation *Bacon* were vague, but that was a poor excuse. The real problem was that tank-infantry cooperation in 8th Army was given frequent lip service by senior commanders, but poorly practised. If Operation *Bacon* had been properly rehearsed, the infantry and armour leaders would have had no excuse for claiming they did not understand their roles. Given the communications problems which contributed to the failure, a rehearsal should also have identified backup procedures if primary radio communications were disrupted (e.g. using flares to indicate that the infantry had reached their objectives). It is also important to note that British airpower and artillery – which had played such an important role in stopping Rommel's advance on Ruweisat Ridge – was not employed to save the 4th New Zealand Brigade. Even more galling is that Lumsden's 1st Armoured had been reinforced to the point that it had 190 tanks in its two armoured brigades, which gave it a 6 to 1 numerical superiority over Nehring's small armoured force.

Nehring decided to attack the 5th Indian Brigade on the morning of 16 July, but the 2nd Armoured Brigade was now close at hand and B Squadron 9th Lancers claimed seven enemy tanks for no loss to themselves.[96] The German Panzers re-organized and mounted another attempt just before dusk, but ran into concentrated anti-tank fire from a battery of 6-pounders with the 5th Indian Brigade, the 5 RTR and the 9th Lancers. There is no doubt that the German armoured attack was repulsed and that the 8th Army achieved a significant tactical success, but claims the DAK lost 24 tanks, six armoured cars and six 8.8cm guns seem wildly exaggerated given German Panzer strength totals on subsequent days (28 tanks on 18 July). Interestingly, Pz.Regt. 8's history noted that it was the RAF that scored on 16 July, when Hurricane IID fighter-bombers destroyed one Pz II tank and severely wounded the regimental commander, Oberstleutnant Teege.

Auchinleck remained committed to attacking, even though these limited attacks were very costly in terms of his infantry, because he had chosen to fight a battle of attrition that he judged Rommel could not maintain for long. Before dawn on 17 July, two battalions from the Australian 9th Infantry Division, supported by the Valentine tanks of B Squadron 44 RTR, launched an attack on Miteiriya Ridge. Once again, the night attack bagged about 750 Italian prisoners, but communications problems led to a lack of timely artillery support and six Valentine tanks were lost on enemy mines. When the sun came up, Nehring organized another counterattack with 12 tanks (six Pz III, six M14/41), armoured cars and artillery, which eliminated two Australian infantry companies and inflicted 317 casualties.[97] From Rommel's perspective, Auchinleck was demolishing the Italian infantry piece by piece while conserving his armour, which would soon place the Afrika Korps in a perilous position. Yet from the point of view of the Australian, New Zealand and South African division commanders, Auchinleck was sacrificing his Dominion infantry (who were difficult to replace) in poorly planned attacks while keeping his British armoured units out of the fray – which led to a good deal of resentment in the 8th Army.

Auchinleck ignored his argumentative Dominion commanders and planned a bigger set-piece attack known as Operation *Splendour*, which he intended to break Panzerarmee Afrika. Rather than rely upon the 1st Armoured Division to exploit another infantry infiltration attack, Auchinleck chose to commit Brigadier Lawrence Misa's 23rd Armoured Brigade (lead unit of the 8th Armoured Division from England), which had just disembarked at Suez between 6 and 8 July. Misa's brigade consisted of three new armoured battalions (40, 46, 50 RTR) manned by Territorials, with no combat experience or familiarity with desert tactics. Nor were the squadron and troop leaders provided any time to learn about desert warfare, which was markedly different from the conditions under which they had trained in England. Furthermore, the brigade's Valentine tanks were not afforded the normal time in workshops to effect repairs after a two-month sea voyage, which meant that the unit was sent to the front with vehicles with uncorrected faults, particularly in its radios.[98] Sending an unprepared unit like the 23rd Armoured Brigade into combat, barely two weeks after it arrived in theatre, was not the mark of a good commander.

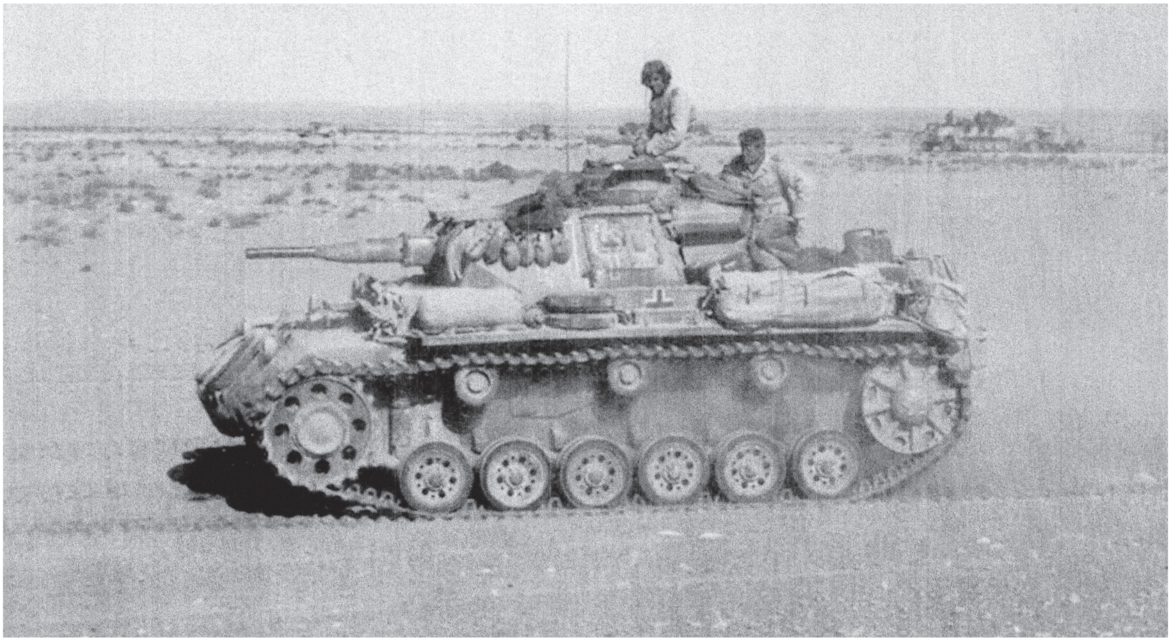
Operation *Splendour* began on the evening of 21 July, with the 6th New Zealand Brigade conducting a 6km-long night infiltration attack to try to seize El Mreir, a bowl-shaped feature just south of Ruweisat Ridge.

The area was defended by a German *Panzergrenadier-Bataillon*, not Italians, and the 15. Panzer-Division had emplaced significant mine obstacles around the feature. Prior to the infiltration attack, Gott's XIII Corps conducted a large artillery bombardment and the RAF had been bombing the 15. Panzer-Division positions all day long, but the German defences were not suppressed. Two New Zealand infantry battalions did succeed in reaching El Mreir before dawn, but tactical communications broke down again, leaving XIII Corps unaware of the course of battle. Although New Zealand sappers did create some small gaps through the Axis mines, few of the supporting anti-tank guns were able to follow the forward infantry units. At dawn, Hauptmann Johannes Kümmel led the 20 tanks from his I./Pz.Regt. 8 against the New Zealand troops at El Mreir. First the handful of 6-pounder portee anti-tank guns were picked off, then the German tanks entered the depression, machine-gunning everything in their path. Unable to request artillery or armour support due to radio problems, the two New Zealand infantry battalions were crushed, losing a total of 880 personnel. As part of *Splendour*, the Indian 161 Motor Brigade (another untried unit, transferred from Iraq) was also tasked with seizing Point 63 on western Ruweisat Ridge to remove the threat of enfilade fire from this quarter. However, the Indian brigade failed to capture Point 63. The essential element of the plan – that the infantry would breach the enemy mine belt and clear away any anti-tank defences so that 23rd Armoured Brigade could exploit through the penetration corridor – had clearly failed by 0645 hours. Indeed, this was a Balaklava-esque moment, with Gott reprising the role of Lord Raglan.

Major General Alexander Gatehouse, who had been brought in to take temporary command of the 1st Armoured Division when Lumsden was wounded just prior to *Splendour*, recommended cancelling the attack by the 23rd Armoured Brigade. Nevertheless, Gott told him that the attack 'must' go in, even though there was no pressing rationale for this decision. At 0800 hours on 22 July, Brigadier Misa formed up his brigade, with Lieutenant Colonel Thomas C. A. Clarke's 46 RTR on the left and Lieutenant Colonel Howard C. F. V. Dunbar's 40 RTR on the right; altogether a total of 88 Valentines and 12 Matilda CS tanks. As soon as the advance began, the tankers spotted Indian infantry withdrawing and realized that they had no idea where any gaps existed in the mine obstacles – if they had even been breached. Nevertheless, both battalions pressed on, directly onto the mines, resulting in about 20 Valentines being disabled. Unlike the British, the Germans ensured that their mines were covered by fire, and now 5cm and 7.62mm Pak guns and 8.8cm Flak guns opened fire on the British armour, bunched up in their engagement area. Both Clarke and Dunbar detached a squadron to try to find a gap in the mines, but virtually all these tanks were knocked out by enemy fire. Hauptmann Kümmel brought up his *Panzer-Kompanie* and placed them into hull-down positions to engage the British tanks. The Valentines were tough, taking multiple hits, but they were gradually shot to pieces. The Matilda CS tanks fired smoke rounds to try to provide some cover for the Valentines, but this proved far too little to make any difference. One German Panzerjäger, Gefreiter Günther Halm, was credited with knocking out nine Valentines with his 76.2mm Pak 36 (r) gun. The unequal contest continued for four hours, until the battered British armour withdrew. The two battalions of the 23rd Armoured Brigade had been demolished, with only seven of 104 tanks returning to their start line. Dunbar was mortally wounded and 203 tankers were casualties.[99] Gatehouse, who had watched the advance of the 23rd Armoured Brigade, was also wounded by a shell splinter. In contrast, Kümmel lost just two Pz III tanks in the battle and his crews suffered three dead and 14 wounded. Lieutenant Colonel John E. Cairnes' 50 RTR, which was detached to support another pointless concurrent attack on Miteiriya Ridge, lost another 23 Valentine tanks to enemy mines on the same day.[100] Operation *Splendour* was an unmitigated disaster. In a single day, Auchinleck and Gott had wrecked the only intact British armoured brigade in North Africa for no appreciable gain. However, these two officers took no responsibility and instead Brigadier Misa was relieved of command.[101]

Amazingly, Auchinleck decided to conduct another set-piece attack on 27 July, dubbed Operation *Manhood*. After South African sappers created breaches through an 800-metre-wide German mine belt, one Australian battalion advanced to Miteiriya Ridge, but it was overrun and destroyed by a German armoured counterattack at dawn. Cairnes' 50 RTR was supposed to support the Australian battalion, but it ran into German anti-tank guns and lost another 22 Valentine tanks. Two British infantry battalions from the 69th Infantry Brigade were also involved in the operation, but they were also overrun by German Panzers. Brigadier John Currie's 2nd Armoured Brigade failed to support the two British infantry battalions, due to confusion about whether the mine belt had been breached (it had). By the time that 2nd Armoured Brigade found a cleared lane through the mines in late afternoon, the 1 RTR and 6 RTR came under intense anti-tank fire, which destroyed at least three Grant tanks and damaged several other tanks. Once again, British armour failed to support Commonwealth infantry in the attack, enabling rapid German armoured counterattacks to smash vulnerable battalions and brigades with relative ease. One can imagine the impact of these tactical disasters, one after another, on front-line morale in the 8th Army.

By the end of July 1942, both sides were completely exhausted. Panzerarmee Afrika was barely capable of maintaining a continuous front and was increasingly dependent upon larger mine barriers to prevent a British breakthrough. The DAK was reduced to just 38 operational tanks and the equivalent of four infantry battalions. While the DAK component still had some resiliency, the Italian corps had suffered heavily and none of their divisions were capable of holding much terrain on their own. Although Panzerarmee Afrika had failed to breach the El Alamein line and was



A Pz III advancing, with a towed 8.8cm Flak gun in the background. While the Germans perfected their combined arms *Kampfgruppen*, the British still tended to operate in tank-heavy formations. (Author's Collection)

hard-pressed at times to fend off 8th Army attacks, Nehring's well-handled Panzer force – never more than 40 operational tanks in July – had demonstrated a remarkable ability to inflict timely and powerful counterattacks.

In contrast, the 8th Army's armoured force enjoyed a growing numerical superiority throughout July 1942 but achieved remarkably little. Lumsden's 1st Armoured Division was badly handled and its movements were ponderous and plagued by uncertainties. Unlike the Germans, the 8th Army's armoured units were refitting in nearby Alexandria and would soon be returning to the front, further increasing the British numerical edge. However, heavy losses in several poorly planned operations created a serious rift between infantry and armoured units, which was allowed to fester without correction. It was also evident that the 8th Army needed to improve its tank-infantry cooperation skills and obstacle-breaching procedures if it was going to inflict a decisive defeat upon Panzerarmee Afrika, rather than just fighting costly battles of attrition. It was also clear after the debacles of May–July 1942 that Auchinleck and Gott were incapable of instituting the improvements necessary for tactical success.

The fighting in July 1942 is typically described as the First Battle of El Alamein; some accounts call it a British victory since Rommel did not reach the Nile, others that it was a stalemate since neither side achieved their immediate operational objectives. The failure of Rommel's desperate gamble to reach the Nile left Panzerarmee Afrika dangerously over-extended and vulnerable to a riposte. However, Auchinleck's mistakes had undermined the ability of 8th Army to function as a cohesive team, which was a vital prerequisite for victory.

CHAPTER 3:
DECISION IN THE DESERT

THE CHANGING OF THE GUARD, AUGUST 1942

> *'You can begin the battle now, Herr Generalfeldmarschall, the petrol is already on the way.'*
>
> *Maresciallo Ugo Cavallero, Chief Commando Supremo, 27 August 1942*[1]

Auchinleck had been dissatisfied with the armoured formations in the 8th Army, but after the failure of Operation *Manhood*, he resolved to make major changes in that branch. On 29 July, he met with Major General Richard McCreery (armoured force advisor for Middle East Command) and Major General John Harding (director of military training) to discuss the reorganization of all armoured and infantry divisions in the Middle East. Still enamored with his 'brigade group' concept, which had been widely resisted by his field commanders, Auchinleck now proposed breaking up the armoured divisions and assigning one armoured brigade group to each infantry division, in order to create a hybrid 'mobile division'. Through this organizational change, Auchinleck hoped to improve tank-infantry cooperation in future operations. McCreery, an experienced armour officer, was aghast at this suggestion, which he recognized as reducing tanks to little more than a support branch. The real problem was that Auchinleck remained ignorant about how to use armoured divisions and instead had decided to chop them up and hand their components over to the infantry divisions; rather than mass his armour, Auchinleck saw dispersal as the solution. Nor did Auchinleck grasp that the

German combined arms approach was not the result of simply assigning tanks and infantry to the same formation, but in training all branches to work together as a team. With his ignorance exposed, Auchinleck reacted angrily to McCreery's objections and threatened to relieve him.[2]

However, the failure of Operation *Splendour* had not gone unnoticed in London, where both Churchill and General Alan Brooke (CIGS) had lost confidence in Auchinleck. On 3 August, Churchill and Brooke arrive in Cairo and discussions began on making leadership changes. Churchill wanted Gott to take over 8th Army, but Brooke quickly recognized that Gott was an empty uniform and recommended his own protégé, Lieutenant General Bernard Montgomery (currently in charge of South Eastern Command in England). Surprisingly, Auchinleck agreed that Gott was not suitable and was willing to accept Montgomery as 8th Army commander (even though there was prior bad blood between the two). Nevertheless, Churchill selected Gott to take over 8th Army and General Sir Harold Alexander to take over the Middle East Command, primarily based on the recommendation of Anthony Eden. Auchinleck was offered a new Near East Command, but refused the post and returned to India without assignment. Yet before Gott could take command of the 8th Army, he was killed on 7 August when his transport plane taking him back to Cairo was shot down by Bf-109 fighters from JG 27. Churchill relented and agreed to Montgomery taking over the 8th Army.[3] Alexander was selected because he was a political soldier with good upper management skills, who would not interfere in tactical matters, as Auchinleck had frequently done from the start of his tenure. While in Cairo, Brooke also initiated a purge to clear out the dead wood in the Middle East Command, removing Brigadier Eric E. 'Chink' Dorman-Smith and other officers who had contributed to past disasters.

In retrospect, Auchinleck was a poor choice as theatre commander from the beginning. First, he did not really understand modern mechanized warfare, the British Army or the desert. As a life-long Indian Army officer, he had missed out on the rapid changes in warfare in the 1930s and remained wedded to notions of colonial-style warfare. Second, Auchinleck proved to be an amazingly poor judge of men and consistently chose the wrong man for the wrong job, then allowed them to flounder in their positions until he relieved them. Third, Auchinleck did not work well with the Dominion commanders who provided the bulk of the infantry formations in the 8th Army and was profligate with their scarce troops. Nor did he show much concern for the welfare of his men by spending his armour and infantry like a Russian commander, throwing more and more brigades into Rommel's buzz-saw, while always demanding more. In his 13 months as theatre commander, Auchinleck had remarkably little to show for 102,000 Commonwealth casualties. As for Gott, he was probably one of the most over-rated commanders in the Desert War. Although he had served with distinction against the Italians during Operation *Compass* in 1940–41, he had consistently under-performed when pitted against the Afrika Korps. Indeed, Gott's acute lack of situational awareness during mobile battles and tendency to make poor snap decisions left his formations virtually leaderless at key moments. The destruction of the 23rd Armoured Brigade – which Gott personally instigated – was his crowning failure. However, British wartime propaganda demanded that defeats needed to be glossed over to avoid hurting morale and the responsible officers like Gott and 'Jock' Campbell needed to be praised and promoted, even though their actual battlefield accomplishments were few.

Montgomery flew out from England and reached Egypt on 12 August. He brought one of his former battalion commanders, Lieutenant General Brian Horrocks, with him to take over the XIII Corps. In England, Horrocks had gained some experience with tanks by commanding the 9th Armoured Division, although he was a career infantry officer. Montgomery was an extremely controversial figure and both his wartime subordinates and postwar historians have offered a wide variety of perspectives about his abilities and contributions to eventual Allied victory. It is generally agreed that Montgomery lacked social skills in dealing with others and that he could be arrogant and petulant, which has coloured many historical narratives on his generalship. Less acknowledged is that Montgomery was a military professional, who, unlike many senior British officers, was more interested in learning the techniques of modern warfare rather than polo, drinking and card-playing (none of which he practised). Indeed, Montgomery was much closer to the outcast RTR officers in terms of interest in technical matters and openness to employing new weapons and tactics. He had served in key staff roles at divisions and corps on the Western Front in 1917–18 and had commanded an infantry division during the brief France 1940 campaign; he rose by hard work and merit and openly despised the 'old boy' network in the British Army. Despite a supercilious attitude, Montgomery was also an excellent trainer of soldiers and demonstrated concern for the welfare of his troops. In the aspects that counted the most – battle command – Montgomery represented the 'fresh approach' that Churchill had been looking for in the Middle East.

Montgomery quickly began issuing orders, among which he terminated the use of the term 'brigade group' and stipulated that henceforth 'divisions would fight as divisions'. His highest priority was to form a corps-size armoured formation, with at least two armoured divisions and a motorized infantry division, to match the Afrika Korps. In the interim, Montgomery tried to instill fighting spirit among the 8th Army unit leaders and staff, pledging that 'the bad old days were over'. Unlike the ascetic Auchinleck, who had left troops to suffer in the desert for weeks on end, Montgomery began rotating some units back to rest in nearby Alexandria or at least rear-area rest camps. Instead of the ridiculously high operations tempo demanded by Auchinleck, with constant raids and attacks, the arrival of Montgomery allowed the 8th Army to catch its breath.

Montgomery knew from special intelligence (ULTRA: Enigma-derived intercepts) that Rommel was planning another offensive against the El

Montgomery needs a ladder to help him climb aboard his Grant tank for a photo opportunity. Montgomery had no experience with tanks prior to August 1942 and he seriously underestimated the difficulties armoured units encountered in crossing defended obstacles. (Battlefield Historian, BHC 01301)

Alamein line, probably in the next few weeks. Given the limited time available, Montgomery did adopt some of the defensive plans already formed under Auchinleck, including an emphasis upon fortifying Alam Halfa Ridge, but he added his own measures to improve the odds. Auchinleck had intended to hold the Alam Halfa Ridge with just the 21st Indian Infantry Brigade, but kept the 44th Infantry Division (which had disembarked at Suez on 19–25 July) back in the rear to help form a final line of defence. Montgomery decided to move the two brigades of the 44th Infantry Division forward on 18 August to defend Alam Halfa.[4] Lumsden's tired 1st Armoured Division was pulled out of the line and replaced with Gatehouse's new 10th Armoured Division. Nevertheless, much of the British armoured force would remain a jumbled up mess for the next month or so, until more replacement tanks and crews arrived. The 10th Hussars had three squadrons at the front, none of which were originally from the regiment. Other odd lash-ups included the composite regiment formed from 5 RTR and the 2 RGH. Six US Army tank crews were also added into British composite units in order to gain tactical experience; on 31 July, four American tanks crews were assigned to the 2 RGH and two to the 3 CLY.[5]

Despite the continued use of composite regiments, the numerical odds were now perceptibly shifting in the Allied favour. Another British infantry division, the 51st Highland, had just arrived in Suez two days before Montgomery took command, and other units would soon be returned to the 8th Army. During July and August, over 500 new tanks arrived in Egypt from England and the United States, with hundreds more en route.[6] Even more significant, Montgomery knew that an Anglo-American landing in French North Africa would occur in the next several months, which would put Rommel's supply base in Tripoli at risk. Consequently, Montgomery was in no rush to attack Rommel and preferred to wait until the odds were overwhelmingly on his side. Soon after taking command, Montgomery held a command post exercise which rehearsed possible responses to a German attack toward Alam Halfa Ridge.[7]

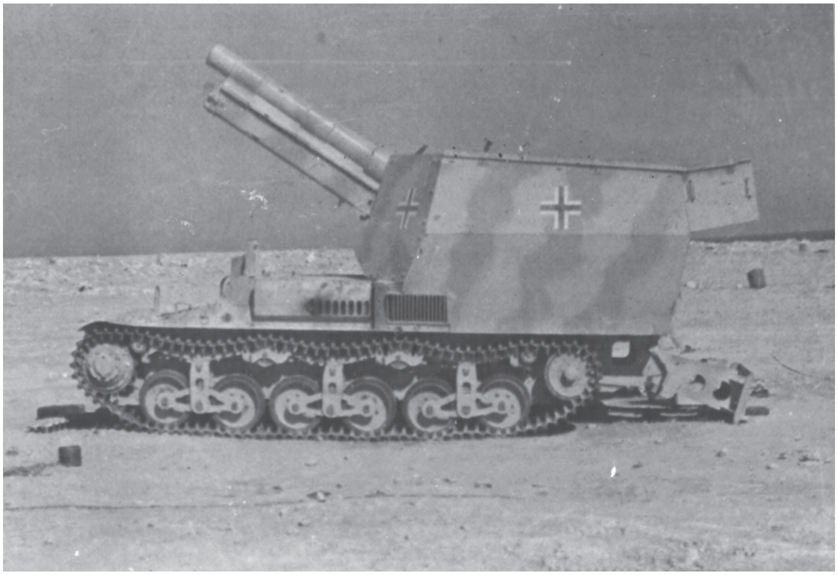
Alam Halfa Ridge lies 25 kilometres south-east of the El Alamein train station and is generally 40 metres higher than neighbouring terrain. The highest point on the ridge is Point 132, near the eastern end. Like Ruweisat Ridge, Alam Halfa Ridge is extremely rocky, but it does offer better opportunities for concealing men and equipment. Loss of Alam Halfa Ridge would compromise the integrity of the El Alamein line, which made it key terrain.

On the other side of the hill, Rommel was increasingly desperate, recognizing that the 8th Army was growing stronger and that his own army's situation was tenuous. Kesselring did agree to release some of the units assigned to *Unternehmen Herkules*, including the elite Fallschirmjäger-Brigade Ramcke (three airborne infantry battalions) and the Italian 'Folgore' division (seven airborne infantry battalions). In addition, enough infantry was flown in from the garrison on Crete to form the 164. leichte Afrika Division, and Rommel received enough infantry replacements to rebuild his badly depleted

Panzergrenadier-Regimenter. The Commando Supremo also provided 3,400 replacements to replace some of the losses in July, as well as a fresh tank battalion for the 'Ariete' division – the XIII Btgl. Carri M. The Italian XX Corps was partially rebuilt, although it remained critically short of motor transport. Nehring was unable to pull the DAK Panzer-Division out of the line until mid-August, by which point sufficient infantry had arrived to hold a near continuous front line. Rather generously, the OKH was able to provide Panzerarmee Afrika with 76 Pz III Ausf L and 20 Pz IV Ausf G tanks, which were split between Pz.Regt. 5 and Pz.Regt. 8. A significant number of repaired tanks, left around Tobruk, were also sent to rejoin their units at the front. A number of veteran tankers had been sent home due to illness and wounds, but replacements arrived from Panzer-Ersatz-Abteilung 5 at Neuruppin and Panzer-Ersatz-Abteilung 7 at Böblingen. Rommel also received about 30 Marder III tank destroyers, which greatly enhanced the anti-tank capabilities of the two DAK Panzer-Divisionen, as well as 23 15cm sFH 13/1 howitzers mounted on French-built Lorraine 37L tractors (L.g.s.F.H.13 (Sfl.) auf Lorraine-Schlepper). By the end of July, the DAK had 128 operational tanks and by the end of August, both *Panzer-Regimenter* were near their full authorized strength, with a combined total of 238 tanks. Furthermore, for the first time Rommel would be able to employ a large number of the latest medium tanks armed with long-barrelled guns, including a few Pz IV Ausf G armed with the new 7.5cm KwK 40 L/48 gun. The Pz IV Ausf G boasted improved frontal armour protection (equivalent to 80mm) and a gun that was significantly better than the 75mm on the Grant/Lee tanks. Thus by mid-August, Panzerarmee Afrika had managed to rebuild a good portion of its fighting strength, at least on paper.

Despite these reinforcements, Panzerarmee Afrika remained at the mercy of its inadequate logistic infrastructure. In July, the Commando Supremo estimated that Panzerarmee Afrika needed about 75,000 tons of supplies per month, but only 45,000 tons were delivered in July and 52,000 tons in August.[8] While the Italians had made some improvements to their theatre logistic capabilities since the fall of Tobruk – including the use of coastal barges to deliver supplies forward to Mersah Matruh – the monthly shortfall in supplies left Rommel with no appreciable reserves of fuel and ammunition. In early August, Pz.Regt. 8 possessed about 1.5 V.S. of fuel – barely enough for two days of combat. Tank and anti-tank ammunition was also in short supply. Aside from logistics, Rommel also knew that the harsh desert environment itself was slowly reducing himself and his troops to physical wrecks. Rommel

A Marder III tank destroyer waits behind a German Panzer unit (tanks visible on the left). The Germans used their tank destroyers to prevent enemy armoured breakthroughs. (Author's Collection)



In August 1942, the Afrika Korps received 23 15cm sFH 13/1 (Sf) self-propelled guns. Like most wartime expedients, the sFH 13/1 relied on obsolescent components, mounting an elderly Krupp-built 15cm howitzer atop an ex-French Lorraine armoured tractor chassis. All of these weapons were lost during the Battle of El Alamein. (Author's Collection)

was seriously ill by July, and by August 16 per cent of the DAK personnel were on the sick rolls. Unlike the British, the Afrika Korps had no place like Alexandria for its troops to rest and recover. Desert illnesses were sapping his army of vigour, and unless he attacked soon Panzerarmee Afrika would be too impaired to accomplish another high-intensity mobile operation. Rommel was able to convince the Commando Supremo to provide his army with 6,000 tons of fuel and 2,500 tons of ammunition by late August, just sufficient to mount another all-out offensive. Kesselring promised that the Luftwaffe could deliver 500 tons of fuel per day for a few days, if necessary.[9]

Rommel now recognized that the northern end of the El Alamein line was too strongly held; a direct assault would be costly and uncertain to produce decisive results. Instead, he chose to revert to his favourite tactic – to mount diversionary attacks in the north with infantry while using the DAK and Italian XX Corps to mount a wide envelopment of the enemy's southern flank. The envelopment would entail a night approach march of 30 kilometres over rough terrain, so Rommel wanted to begin the offensive on the night of 30/31 August since a full moon was expected to reduce command and control problems in moving six Axis divisions forward across the desert to the line of contact with the enemy. Once through the Allied covering forces and minefields in the XIII Corps sector close to the Qattara Depression, Rommel intended to swing his armour north-east toward Alam Halfa Ridge, passing to the east of that feature, and then pushing to the coast at El Hamma to encircle the XXX Corps. He reformed an *Aufklärungsgruppen* (reconnaissance group) with about 40 armoured cars to serve as an advance guard for the main body. On paper, the plan offered the potential of breaking the El Alamein position in just a few days and either eliminating or routing the bulk of the 8th Army. However, surprise was lost because ULTRA intercepts tipped off Montgomery to the timing and likely location of the attack, which allowed him to reinforce the southern sector. British sappers laid more mines in Rommel's expected path of advance. Furthermore, the British stepped up their anti-shipping efforts, which destroyed or delayed most of the supplies that Maresciallo Cavallero had promised, leaving Panzerarmee Afrika with just 6–8 days' worth of fuel (about 2,400cbm).[10]

Despite this unpromising start, Rommel decided on 27 August to begin moving his mechanized forces forward under cover of darkness, but it took two nights just to assemble his divisions on the El Kharita plain, near the northern edge of the Qattara Depression. Rommel deployed the 90. leichte Division on his left, then the three divisions of the Italian XX Corps, then the two DAK Panzer-Divisionen, with a reconnaissance group (A.A. 33, A.A. 580) on the extreme right. Altogether, this formation included over 500 armoured fighting vehicles and roughly 45,000 combat troops – the largest Axis strike force ever assembled under one commander in North Africa. At 2145 hours on 30 August, the Axis divisions began advancing eastwards and at 2200 hours they began crossing the start line. The Italian XX Corps had begun to adopt tactical methods learned from the Germans, so both Italian armoured divisions marched in three combined arms battle groups (each with one tank battalion, one motorized infantry battalion, a battery of Semovente and one battery of towed artillery).[11] As a result, for the first time in the Second World War, Italy now employed a relatively complete mechanized corps on the battlefield. As with the *Flächenmarsch* during the Gazala campaign, advance parties had marked the route with lights in used fuel cans, but the advance went poorly from the start. Fuel consumption was three times higher than expected due to areas of soft sand along the route – which should have been identified by ground reconnaissance prior to the offensive. Furthermore, the German *Aufklärungsgruppen* failed to appreciate the extent of the Allied mine barriers in the south or to note that, for once, the British had units covering their obstacle belt.

Brigadier Bosvile's 7th Motor Brigade was directly in the path of the Italian XX Corps, while Brigadier Carr's 4th Light Armoured Brigade was facing the oncoming DAK. Altogether, Renton's 7th Armoured Division was conducting a screening operation across a 24km-wide sector against a vastly superior enemy force – a daunting task even for a veteran formation. However, the sector between Alam Nayil and the Qattara Depression was blocked by two large minefields known as 'January' and 'February'. Around 2400 hours, scouts from the 90. leichte Division encountered the 'February' minefield. The British outposts watching the mine belt detected enemy movement, reported it efficiently to division, which then requested RAF support. At the same time, the 7th Armoured Division's tanks and armoured cars moved into their battle positions east of the mine barrier. This time, British situational awareness was excellent and their communications functioned exactly as intended. First, aircraft began dropping flares around 2430 hours, which was followed up by one bomber attack after another. Altogether, the RAF dropped

Generalmajor Georg von Bismarck, commander of the 21. Panzer-Division, standing next to a Panzerbefehlswagen III. German armoured warfare doctrine placed great emphasis upon the use of such command vehicles. Von Bismarck was killed on 31 August 1942 during the Battle of Alam Halfa. (Battlefield Historian, BHC 01344)

38 tons of bombs on the Axis columns during the night, which proved very disruptive. German and Italian sappers struggled to create breaches through the 'February' minefield, and suffered casualties from British machine-guns, mortars, anti-tank fire and 25-pounders. Sappers from the 'Littorio' division were the first to breach the 'February' minefield at 0430 hours, but when an Italian armoured battlegroup pushed through the gap, it bumped unexpectedly into the 'January' minefield. Generale Carlo Mayneri, commander of the 'Littorio' division, was wounded when his command tank hit a mine.[12] By 0530 hours, the German Pioniers had also created a few small gaps through the mine barrier, but at dawn on 31 August, Panzerarmee Afrika was still clawing its way through the minefields. Soon after sunup, Nehring was badly wounded by a bomb splinter and was temporarily replaced by Oberst Fritz Bayerlein. Shortly thereafter, Generalmajor Georg von Bismarck, commander of the 21. Panzer-Division, was killed by a mine.[13] Renton's 7th Armoured Division had fought a model delaying action – the best ever by 8th Army – which wrecked Rommel's operational timetable. The British covering force had also accomplished its mission at negligible cost; units like the 10th Hussars lost two tanks and suffered 22 casualties.

Rommel's plan of swinging around Alam Halfa Ridge before the British could react had evidently failed, and it was increasingly clear that the 8th Army had anticipated an enveloping attack. Rommel did not confer with Bayerlein until 0900 hours, at which point he decided to modify the original plan (it is not clear what Rommel was doing in the four hours since dawn, but there are indications that illness was affecting his ability to lead from the front). He ordered the main attack to start at 1200 hours, with the two DAK Panzer-Divisionen advancing to capture Point 132 on Alam Halfa Ridge while the Italian XX Corps advanced towards the western end of the ridge. Yet no sooner had the bulk of the Axis forces cleared the mine barrier – which caused the over-matched 7th Armoured Division to fall back – than a sandstorm arose which further hindered visibility and movement. Many vehicles also required refuelling, which induced further delay. Under these conditions, deploying the six Axis divisions from column formations into wedges took more time than expected and noon passed before Panzerarmee Afrika was ready to advance. The Italian 'Littorio' division also got tangled up with 21. Panzer-Division, adding more confusion. Under the random frictions of war, Rommel's latest offensive steadily unravelled.

Meanwhile, Montgomery was fully aware of the enemy advance and all units in Horrocks' XIII Corps had begun moving into their defensive positions after the codeword 'Twelve Bore' was issued at 0130 hours. Brigadier George Roberts' 22nd Armoured Brigade was positioned on the south-west side of Alam Halfa Ridge (which was defended by two infantry brigades of the 44th

Infantry Division) near Point 102 and Montgomery had ordered that most of its tanks should be dug in. Bulldozers were used to dig fighting positions in the rocky surface, although the Grant – with its hull-mounted main gun – could not fire in a hull-down position. While digging in tanks can increase their survivability in a defensive battle, it does deprive them of their mobility and it does risk having some armour unable to participate due to poor choice of positions. Montgomery also transferred Richards' 23rd Armoured Brigade to Horrocks, with its 100 Valentine tanks deployed west of Alam Halfa. Brigadier Edward C. N. Custance's 8th Armoured Brigade, located 5 kilometres south of Alam Halfa Ridge, remained under Gatehouse's 10th Armoured Division. For the first time, three British armoured brigades would fight in close proximity and with strong infantry, artillery and anti-tank support.

Rommel had great difficulty organizing the advance against Alam Halfa Ridge, which did not begin until nearly 1400 hours. Renton's 7th Armoured Division, reinforced with a squadron of Crusader tanks from the 3/4 CLY, continued to harass the oncoming enemy armour. Von Vaerst took charge of the DAK (another indicator that Rommel was indisposed) and advanced to the north-east with both *Panzer-Regimenter* in *Breitkeil*. The Crusaders succeeded in picking off several German vehicles, but also lost 3–4 of their own number, including one knocked out by a lucky shot from a Pz III Ausf L from a range of 2,000 metres. Under pressure, the 7th Armoured Division screening forces were pulled back out of range. Brigadier Roberts, on Alam Halfa Ridge, could observe 87 German tanks approaching in formation, and he gave orders not to fire until the enemy tanks were within 1,000 metres. Although German Stukas had mounted a bombing raid on the ridge, apparently the DAK did not initially spot the dug-in British tanks and nearly bypassed Roberts' brigade. Furthermore, Rommel had specified that the DAK was supposed to attack toward Point 132 in the centre of the Alam Halfa Ridge, not Point 102 on the western end of the ridge. Roberts had the 1/6 RTR on his right flank, the 3/4 CLY in his centre and the 5 RTR/2 RGH on his left flank. A battery of 6-pounder anti-tank guns were deployed in front of the British tanks and 25-pounder guns on the flanks.

Captain B. C. Forster in 1 RTR on the west end of Alam Halfa Ridge could clearly see the enemy:

> They were about 2,000 yards from our tanks and not a shot was fired from the brigade position. The wind deadened the noise of their engines and they came on in silence. Our tanks, where possible, were turret down with the commanders standing on their turrets.[14]

At first, the Germans did not spot the British positions and slowed to scan the terrain with their Zeiss binoculars. Around 1730 hours, both *Panzer-Abteilungen* from the 21. Panzer-Division advanced to within 1,000 metres and the tank action began. Oberst Müller led his attack with 14 of the new Pz IV Ausf G tanks, which had a significant firepower advantage over the Grant tanks. The brunt of the German attack fell on the composite 3/4 CLY regiment, which deployed its two squadrons of Grant tanks (a total of 28) on line facing south. The Pz IV tanks quickly demolished Captain A. Cameron's A Squadron, 4 CLY, knocking out all 12 of its Grant tanks in a matter of minutes.[15] Likewise, the Pz IVs scored multiple hits on the Grants in B Squadron, 4 CLY, although none were destroyed. Despite this success, concealed 6-pounders managed to hit some of the Pz IVs from closer range and 25-pounder guns firing in direct lay also inflicted damage. For the most part, the Germans were unable to fight a combined arms battle as the British were doing, since the steady artillery fire from 1 RHA prevented motorized infantry, Panzerjäger and Flak guns from being brought up to support the attack. The Luftwaffe did provide a Stuka attack on the ridge, inflicting seven casualties, but the bombs mostly fell on the B-echelon personnel on the far side. After the destruction of A Squadron, 4 CLY, Müller tried to advance into the gap with some tanks, but Roberts deftly committed his reserve, the Royal Scots Greys (RSG), equipped with a mix of Grant and Stuart tanks. The RSG was the very last British cavalry unit to mechanize in 1941 and was a newcomer to the 8th Army. The sudden appearance of a new British armoured unit over the ridge, plus the bombardment from several battalions of British artillery, caused Müller to abort his advance and eventually begin falling back as darkness fell. Six German tanks did succeed in getting around the British tanks to the east, getting close to Roberts' brigade headquarters, but ran into F Squadron, 2 RGH, and lost a Pz II destroyed.[16] Altogether, the 22nd Armoured Brigade lost 17 Grants knocked out, while the British claimed that 15 German tanks were knocked out during the attack.[17] After dusk, the DAK leaguered south of Alam Halfa Ridge, but was bombed continuously during the night.

Surprisingly, the Axis offensive had accomplished remarkably little during the course of its first 24 hours. In getting through the British minefields, the Italian XX Corps had two medium tanks and 15 other vehicles destroyed, plus 26 AFVs damaged.[18] The 'Ariete' division barely advanced past the minefield, while the 'Littorio' advanced about 6 kilometres before stopping. Any further Italian advance was unlikely, given the strong position of Freyberg's 2nd New Zealand Division on Alam Nayil Ridge and the proximity of the supporting 23rd Armoured Brigade. Likewise, the 90. leichte Division achieved little beyond getting through the British mine barrier and serving as a flank guard. Rommel was also a virtual nonentity during the day, delegating more to his subordinates than usual and displaying uncharacteristic uncertainty. It is very likely that he was ill and unable to exercise direct command. The night did not go any better than the day, with very little fuel and ammunition making its way forward to replenish the Panzer-Divisionen. Nevertheless, Rommel ordered von Vaerst to make one more attempt to seize Alam Halfa Ridge with his 15. Panzer-Division. The 21. Panzer-Division, short on fuel, would sit out the second day of battle.

Von Vaerst's 15. Panzer-Division advanced from leaguer at 0640 hours and by 0700 hours was in contact with Roberts' 22nd Armoured Brigade again. Oberstleutnant Mildebrath deployed his Pz.Regt. 8 on line, with Hauptmann Kümmel's I. Abteilung on the left and Hauptmann Zügener's II. Abteilung on the right. The German Pz IV tanks were able to knock out four Grants from B Squadron, 3 CLY; among the casualties were two US Army enlisted crewmen wounded. F Squadron 5 RTR was also hotly engaged, with a number of its tanks hit; two more American tankers were among the wounded, including a Lieutenant Anderson.[19] However, five German tanks were also taken out by direct hits and Hauptmann Zügener was wounded. Horrocks ordered the 8th Armoured Brigade to move in from the east and by 0830 hours, Mildebrath's Panzers were fighting two British armoured brigades. Lieutenant Colonel Harold E. Pyman's 3 RTR lost four tanks, but was able to hit three enemy tanks. The tank battle devolved into a series of unconnected skirmishes for the rest of the day, but the lack of additional fuel reserves prevented Mildebrath from using manoeuvre. The RAF also denied the Luftwaffe the ability to provide any meaningful air support while dropping 80 tons of bombs on the Afrika Korps. Rommel himself was subjected to multiple air attacks during the day and no fewer than seven of his staff officers were killed.[20] By late afternoon, the frustrated German tankers broke off their attack on Alam Halfa Ridge and retired to leaguer. That night, the RAF bombers returned to drop more flares and bombs, including a few 4,000lb HC blockbusters – a special treat for the Afrika Korps.

By nightfall, it was evident to Rommel that the British defences on Alam Halfa Ridge were too strong and that a breakthrough to the sea was not possible. Reports from the Commando Supremo also revealed that most of the promised fuel had been lost en route, leaving Panzerarmee Afrika with negligible fuel reserves. Rommel had no choice but to break off his fruitless offensive, but he waited until 1000 hours the next morning before issuing orders for a phased withdrawal back to the start line. On the other side, it was also clear to Montgomery that Rommel's offensive was sputtering out and he was keen to follow up with a riposte of his own. To begin with, Renton's 7th Armoured Division was ordered to send out its armoured cars to try to harass the enemy logistic columns which moved at night across the desert. During the night of 1/2 September, a raiding party from the 4/8th Hussars intercepted a large Axis truck column near Qaret el Himeimat and destroyed a number of vehicles, further exacerbating Panzerarmee Afrika's logistic problems. By dawn on 2 September, it was clear to the British troops on Alam Halfa Ridge that the Afrika Korps was slowly withdrawing west back towards the minefields. A number of abandoned German AFVs were found, including a 15cm sIG 33 self-propelled gun.

Montgomery was cautious, not willing to risk his armour out in the open yet, just in case Rommel turned to fight. Instead, the British counterattack plan, designated Operation *Beresford*, was simply to have Freyberg's 2nd New Zealand Division push south with two infantry brigades from Alam Nayil Ridge, supported by two squadrons of Valentine tanks from the 23rd Armoured Brigade (which had not yet been involved in the battle). Montgomery optimistically hoped that the New Zealanders and tanks could either cut off the Axis retreat or at least make it difficult. During the day, the Desert Air Force (which now including American B-25 bombers) conducted over 2,700 sorties over the battle area, which seriously degraded Axis tactical mobility. Operation *Beresford* commenced at 2230 hours on 3 September, but Rommel had anticipated a threat to his left flank. Prior to the Allied attack, the 90. leichte Division was reinforced with elements from the Fallschirmjäger-Brigade Ramcke and 'Folgore' parachute division. The attempt to close off the minefield gaps encountered an alert enemy who put up stout resistance. Brigadier George H. Clifton, commander of the 6th New Zealand Brigade, was captured by Italian paratroopers. Major Alan P. Hughes, commander of B Squadron, 50 RTR, was lured by German infantrymen using the same colour flares as friendly infantry onto an uncleared minefield; Hughes was killed and 11 of his Valentines were lost.[21] The Allied night counterattack failed and resulted in a total of 983 Allied casualties, although Italo-German casualties were also heavy.

Altogether, during the Battle of Alam Halfa, the Afrika Korps lost 36 tanks *Totalausfälle* (mostly older models, with fewer than one-third comprising the latest Pz III and Pz IV long-barrelled models), three self-propelled 15cm guns and 227 motor vehicles, while the Italian XX Corps lost 11 tanks and 97 motor vehicles; in sum, just 9 per cent of the starting armoured force. However, half the German tanks involved – a total of 113 – were damaged but retrieved. Interestingly, German forces noted that about 400 of their personnel casualties (22 per cent of their total losses) were caused by air attacks alone, as well as 170 vehicles.[22] The 8th Army lost 68 tanks (31 Grants, 21 Valentines and 15 Crusaders/Stuarts) and 18 anti-tank guns. Most of the British tank losses were caused by tank fire, with only about 11 per cent caused by German anti-tank guns and 6 per cent by artillery fire. Compared to previous battles in the Desert War, the Battle of Alam Halfa was short and did not involve heavy losses for either side, yet it marked an abrupt shift in the strategic initiative. From here on, Panzerarmee Afrika would no longer have the ability or resources to decide the campaign through offensive action.

While not a tactical fiasco, Rommel's second attempt to break through the El Alamein line was frustrated by lack of fuel reserves and the smothering effect of Allied air supremacy on Panzerarmee Afrika's tactical mobility. As Bayerlein later noted, the RAF attacks 'literally nailed us to the ground'.[23] Yet the RAF was not always present over the battlefield – the initial attack against Alam Halfa Ridge was made under cover of a sandstorm, which reduced visibility. Nor was the RAF a factor in Panzerarmee Afrika's tortured advance through the mine belts – that was due to limited mine-clearing capabilities and lack of proper pre-battle planning. The strength of the British defence – particularly in artillery and anti-tank – was a shock for the Germans. Unlike earlier battles where Allied anti-tank guns had been sacrificed fighting mounted on portee, the 6-pounders on Alam Halfa were dug in and well concealed. While the German Pz IV Ausf G tank was able to inflict disproportionate losses on the British Grant tanks, there simply were not enough of them (or the fuel to keep them going) to tip the battle. Furthermore, the German Panzers fought without their usual combined arms advantages; except for the Marder III tank destroyers and a few self-propelled guns, most of the German anti-tank and artillery could not get close enough to Alam Halfa to properly support the attack. Perhaps the only bright spot for the Axis in the unsatisfactory Battle of Alam Halfa was that Panzerarmee Afrika conducted a very professional phased withdrawal from the battlefield while under constant air attack – no mean achievement for any army.

From the British perspective, Montgomery achieved a tactical victory strictly through defensive action. The main British armoured force was used conservatively throughout the battle and enjoyed solid support from anti-tank and artillery batteries, which gave Horrocks' XIII Corps a decided advantage in firepower. Unlike previous battles, the British armoured forces engaged did not suffer from communications problems or failure to receive timely resupply of fuel and ammunition. By fighting a stationary battle, Montgomery and Horrocks were able to maintain tight control over their forces and ensure that there were no surprises. With the added advantages of excellent signals intelligence to provide early warning and plentiful air support, Montgomery held a winning hand from the start. Operation *Beresford* was a sensible attempt to interfere with the Axis retreat that failed simply because the 8th Army's infantry brigades and their supporting tanks still had great difficulty in pulling off complicated night operations. If nothing else, the failure of *Beresford* helped Montgomery to appreciate where improvements in 8th Army tactics were necessary.

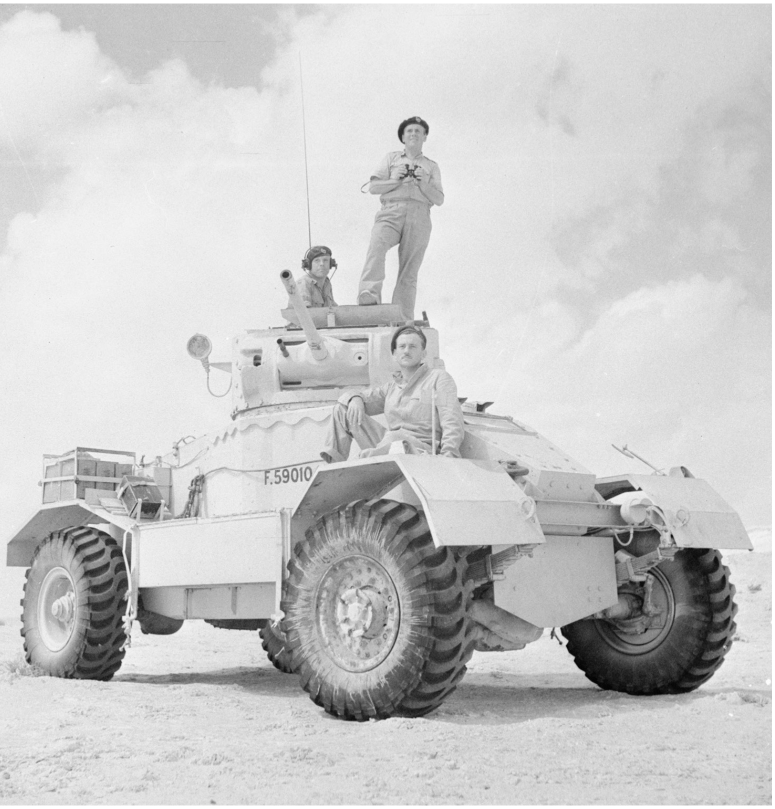
After the Battle of Alam Halfa, both sides pulled their armour back to refit while using infantry formations and mine barriers to hold a continuous front from the Mediterranean to the Qattara Depression. On the Axis side, it was time for leadership changes due to illness, wounds and fatigue. Rommel himself was in poor health, and General der Panzertruppe Georg Stumme was sent to temporarily replace him as commander of the Panzerarmee Afrika. Stumme was a cavalry officer with considerable experience with mechanized forces in the Polish, French, Balkan and Russian campaigns. Rommel handed over command to Stumme on 23 September and flew back to Germany for a long rest. Nehring, wounded at Alam Halfa, was replaced as commander of the DAK by Generalleutnant Wilhelm Ritter von Thoma, one of the most experienced Panzer leaders in the Wehrmacht. Most of Panzerarmee Afrika's key staff – Gause, Westphal and von Mellenthin – all rotated back to Germany due to long-term illness. By late September 1942, virtually all of the original core of veteran

'Afrika' senior leaders had returned to Germany. Indeed, the period around the Battle of Alam Halfa signalled a changing of the guard for both sides, which did not bode well for the Axis position in North Africa.

GEARING UP FOR THE MAIN EVENTS: SEPTEMBER 1942

'I would rather be the hammer than the anvil.'

Pmk k cj



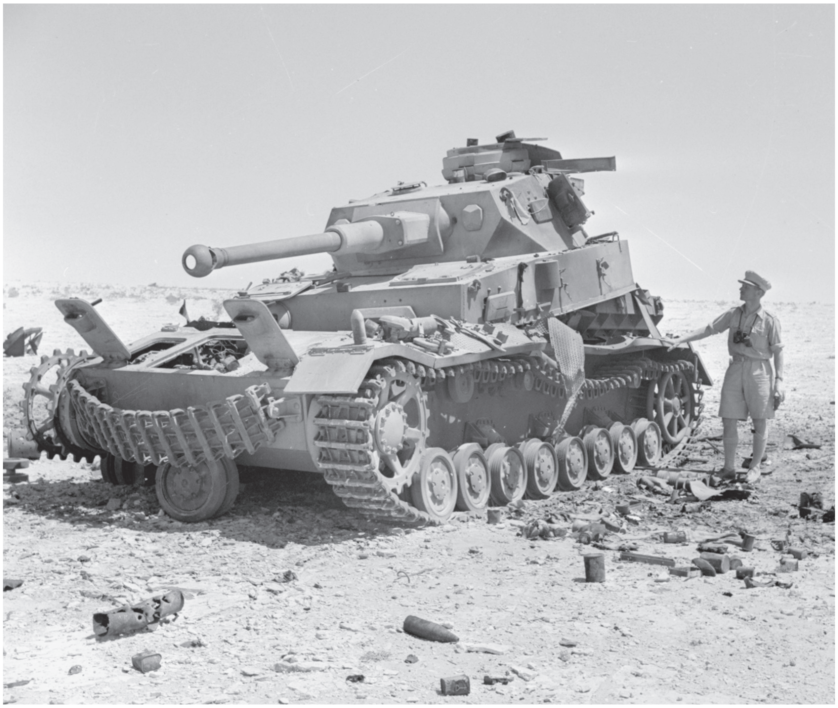
In September 1942, 8th Army began to receive some of the new AEC Mk I armoured cars, equipped with a 2-pounder gun. The 11-ton vehicle was diesel-powered and much better protected than previous British armoured cars. (IWM, E17126)

Within a few days of Panzerarmee Afrika's repulse at Alam Halfa, Churchill began demanding that the 8th Army mount a counteroffensive as soon as possible. Indeed, Churchill was hoping to see Montgomery attack by late September.[24] In addition to his normal urge for aggressive action, Churchill was also keen to see a British victory in Egypt prior to the anticipated Anglo-American landing in French North Africa (Operation *Torch*). Yet Montgomery would not be rushed and through Alexander – who possessed the requisite diplomatic skills that Montgomery lacked – he communicated to Churchill that the 8th Army would not be prepared to attack until about mid-October. Montgomery recognized that Alam Halfa was a tactical defensive victory, but in order to defeat Panzerarmee Afrika, the 8th Army would have to be able to fight a much more aggressive battle of manoeuvre. Consequently, Montgomery intended to transform the 8th Army for its great trial of strength against Panzerarmee Afrika by focusing on improvements in three functional areas: leadership, equipment and training.[25]

It is an ancient maxim among soldiers that 'a fish rots from the head down', meaning that poor leadership results in poor operational performances. Although equipment deficiencies were often blamed for British defeats in the desert in 1941–42, incompetent and timid leadership was the real root cause. Soon after arriving in Egypt, Montgomery began his own purge of officers from senior command and staff positions in order to create a new cadre for 8th Army that was congruent with his style and methods. One of the first to go was Ramsden in the XXX Corps, who was unceremoniously dumped in favour of one of Montgomery's protégés, Lieutenant General Oliver Leese, who was flown out from England. After a distinguished career as a junior infantry officer in the First World War, Leese ascended the career ladder as a skilled staff officer in the interwar period and was personally known to Montgomery. Leese also had a smattering of armour experience in commanding the newly formed Guards Armoured Division in England, yet Montgomery was likely drawn to the fact that Leese was not a Sandhurst graduate (he had been commissioned through the Officer Training Corps) and had risen by merit. Montgomery was less keen on Lumsden, whom he recognized as argumentative and lacking in his kind of fanatical zeal, but decided to keep him on for the time being and put him in charge of the X Corps (replacing Holmes). The X Corps was expected to become 8th Army's armoured strike corps and Montgomery wanted Horrocks to command it, but was convinced by Lieutenant General Richard McCreery, Auchinleck's armoured advisor, that Lumsden's recent armour experience in the desert, chequered as it was, would prove useful in forming the new corps based on the 1st, 8th and 10th Armoured Divisions.[26] McCreery himself would have been an excellent choice to lead an armoured corps, but was instead miscast as Alexander's chief of staff at Middle East Command.

It is important to note that Montgomery had relatively little prior interaction with armoured units and commanders up to this point in his career. Montgomery's interwar command experience was rooted in colonial soldiering in places like India and Palestine – he was never involved in any of the mechanization experiments in England. In his memoirs, Montgomery admitted that he had never even seen any British tanks while serving as an infantry division commander in the 1940 campaign in Belgium. Nevertheless, Montgomery was keenly interested in the tools of his profession, which included tanks, and he could be an adept learner when it served his interests. In terms of the leadership of the 8th Army's armoured divisions, Montgomery probably relied heavily on his own personal intuition, but was willing to take some advice from functional area experts like McCreery. He also brought his own armour advisor from England, Colonel Robert H. B. Arkwright, a cavalry officer from the 12th Royal Lancers. Unlike Rommel, who was simply provided replacement division commanders by the OKH, Montgomery ultimately had greater influence over who led his armoured formations.

Briggs was promoted from brigade command to take over Lumsden's 1st Armoured Division, while Major General John Harding took over the 7th Armoured Division from James Renton (who was sent back to England). Although Harding had been a member of O'Connor's inner circle since the beginning of the Desert War and was a talented staff officer, he had never commanded more than a light infantry battalion and his most recent posting was as director of training. Indeed, Harding was poorly suited to command an armoured division in the field, particularly when Montgomery had veteran armoured commanders like Brigadier William Carr available. However, Carr



British soldiers inspect a destroyed Pz IV Ausf F tank after the Battle of Alam Halfa in September 1942. Note that this is the early version of the tank, with the KwK 40 L/43 gun. (IWM, E16510)

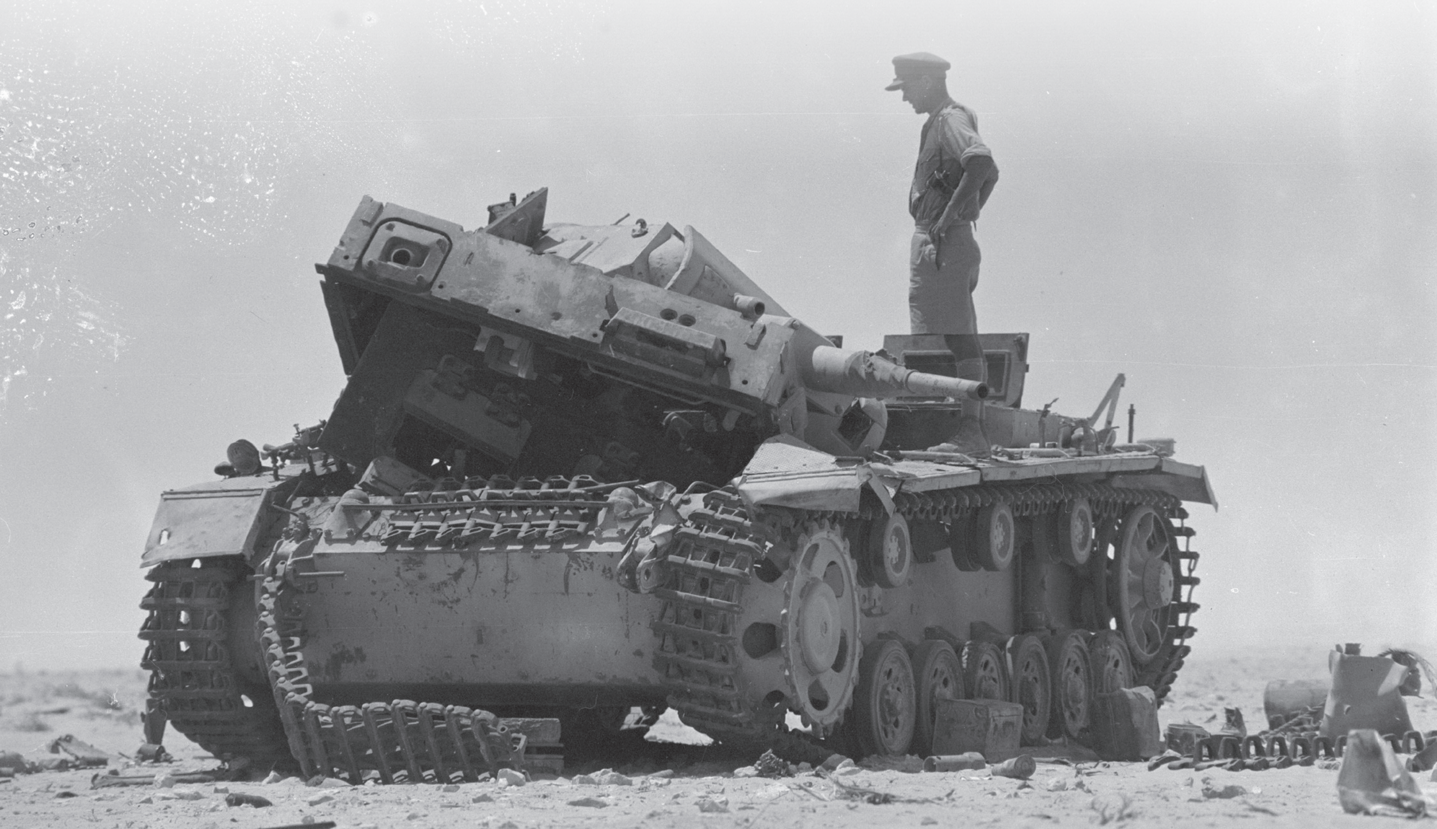
was an obscure Territorial Army (TA) officer, while Harding had titled family pedigree that was useful for an outsider like Montgomery; consequently, Harding got an armoured division and Carr was sent back to England to teach tank tactics to cadets at Sandhurst. Gatehouse, after recovering from his wound at Ruweisat Ridge, retained command of the 10th Armoured Division for the time being, but his days in command were numbered. Major General Charles H. Gairdner, a Hussar officer, was picked to lead the 8th Armoured Division, even though this formation was essentially being broken up for its component units and would soon be disbanded. Gairdner had also been one of O'Connor's staff officers and had been given the 6th Armoured Division in Palestine (a TA division that was primarily a training formation). By September 1942, the 6th Armoured Division was assigned to the British 1st Army that would land in Algeria during Operation *Torch*, but Gairdner was not going to combat with that formation.

Altogether, the 8th Army's armour was controlled by one corps commander, three division commanders and seven brigade commanders. Gatehouse and Briggs were the two most senior RTR officers and four of seven brigade commanders belonged to the RTR. While most of these senior officers had direct command experience with armour, Harding and Fisher had no direct experience with tanks at all. In terms of age, the average for these officers was 43–48, but Roberts was just 36 while Brigadier Arthur G. Kenchington was 52. Likewise, the level of experience in desert warfare varied from hardened veteran to relative newcomer. Had the British Army better prepared for a mechanized war in the 1930s, it would have had more trained mid-level and senior RTR officers like Roberts and not been forced to rely upon relative novices to lead its tanks in what was shaping up to be one of the critical battles of the war.

Montgomery also created a more efficient 8th Army staff to plan and direct operations. Auchinleck's staff had been amateurish and fragmented; operational planning had been cobbled together mostly by the eccentric Colonel Eric Dorman-Smith, with intelligence, operations and logistics functioning as semi-autonomous fiefdoms. This kind of approach had sufficed in colonial campaigns, but it proved disastrous against a peer enemy. After Dorman-Smith was relieved in August, Montgomery made Brigadier de Guingand his chief of staff – a role which was critical in the German Heer but typically of little consequence in the British Army. Montgomery empowered de Guingand to forge the 8th Army staff into a close-knit, high-functioning team. The key staff players (all three GSO1s) were: Lieutenant Colonel Charles Richardson (plans), Lieutenant Colonel Hugh Mainwaring (operations) and Lieutenant Colonel Louis M. Murphy (intelligence). However, only de Guingand and Major Edgar Williams (a GSO2) were read into ULTRA, the decryption of German Enigma cipher traffic. Early on, Montgomery was impressed by the erudite Major Williams – who while a troop leader in the KDG had been the first British officer to meet the Afrika Korps in battle back in February 1941 – and intended to make him his senior intelligence officer as soon as practical.[27]

In terms of the 8th Army's equipment, the medium tank was now the *de facto* critical component of ground warfare. A total of 179 M3A1 Grant/Lee medium tanks were operational at the front, with another 30 ready for issue by 23 October 1942.[28] While the 75mm guns on the M3A1 medium tanks had given a substantial boost in front-line firepower, the Grant-equipped squadrons had suffered heavy losses in combat and were regarded as an interim solution at best. Just as the Afrika Korps was retreating from Alam Halfa, American cargo ships carrying the first shipment of M4A1 (Sherman) medium tanks and M7 (Priest) self-propelled guns arrived in Suez. With its cast construction and well-sloped turret, the M4A1 was a significant improvement over the M3A1 and nearly a match for the Pz IV Ausf G. Although AP ammunition fired from the 75mm M3 cannon on the Sherman had less armoured penetration than Panzergranate AP rounds fired from the 7.5cm KwK 40 L43 or L48 on the Pz IV Ausf G, the American tank was provided with a vertical gun stabilizer that enabled better quick-shooting in a manoeuvre battle. Most of the Shermans delivered in the first batch to Egypt were M4A1 models equipped with the 350hp Continental R-975-C1 gasoline engine, but some M4A2 models (which the British referred to as 'Sherman IIIs') with the 375hp General Motors 6046 diesel engine were also provided. Compared to the Pz IV Ausf G, which was powered by the 265hp Maybach HL 120 TRM gasoline engine, the M4A2 was faster and had better range. Overall, the Sherman was a well-rounded, reliable, relatively mature tank design, and it could be built in massive quantities. Yet it is important to keep in mind that the British Army's existing armoured doctrine was still based on the roles of cruiser and infantry tanks, which influenced how the Shermans would be used.

In London, Churchill seemed to think that the Shermans could simply roll off the cargo ships and head off to battle, but the process of turning the M4A1 medium tank into a combat-ready armoured fighting vehicle required considerable time and effort by the RAOC depot at Abbassia, which employed over 12,000 personnel. Sand skirts had to be fabricated and mounted on new tanks, as well as repairing a variety of minor defects acquired during shipment (some parts tended to corrode quickly when exposed to salt water). Then the British tank crews needed several weeks of training on operating the Shermans, including driver training and range firing to give them confidence in the vehicle. The B-echelon technicians also needed to learn how to maintain the Sherman tank in the field. While the introduction of the Grant tank six months prior had helped to establish procedures for fielding new AFVs in the 8th Army, the RAOC depots were so overwhelmed with existing work that they could only process new tanks in small batches (keeping in mind that the depots were also responsible for repairing the large backlog of battle-damaged tanks). Even though the first Sherman tanks were provided to the 9th Queen's Royal Lancers on 8 September, only 252 of the first 318 were operational with 8th Army by 23 October, with another 20 ready for release.[29] During the six weeks between the delivery of the first M4A1 medium tanks in Egypt and the start of the British offensive at El Alamein, tank crews trained intensively on the new vehicles, but some units were just receiving their Shermans when the



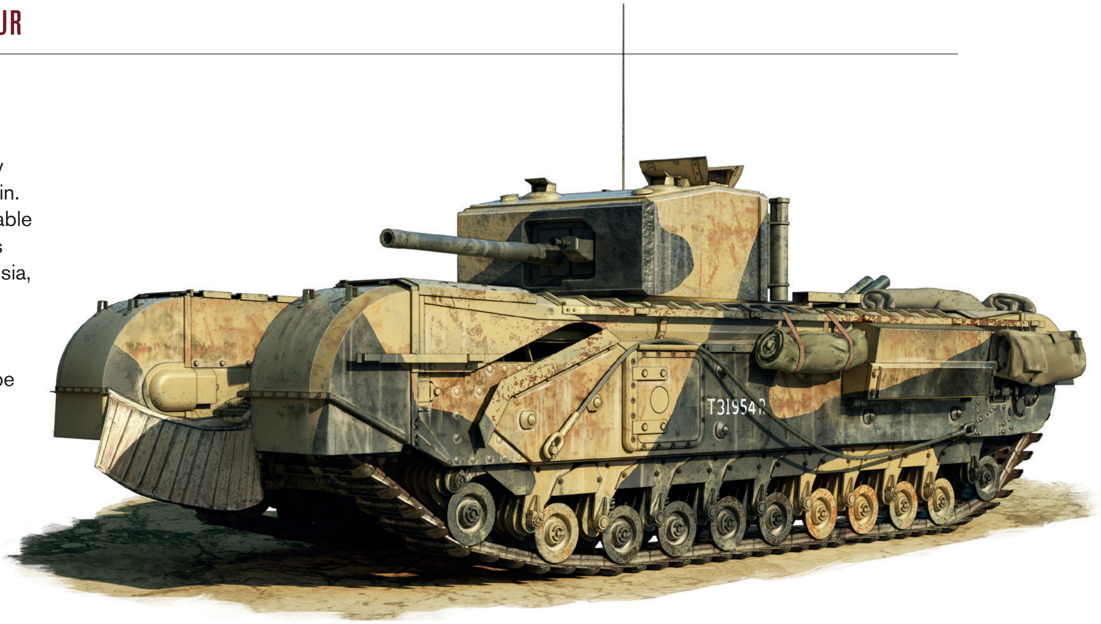
An Allied officer examines the wreck of a Pz III after the Battle of Alam Halfa in September 1942. In order to prevent the enemy from recovering their damaged tanks, the Royal Engineers usually blew up battlefield wrecks at night. (Author's Collection)

British offensive began. As a result, the 8th Army had been provided with an improved medium tank that could go up against the best German medium tanks, but the amount of crew training varied considerably across units.

Given the number of American-built tanks serving in the Middle East, the US Army decided to send a maintenance unit to care for the Stuarts, Grants and Shermans. Before the first Shermans even arrived in Egypt, the US Army 525th Heavy Maintenance Company (Tank) dis-embarked in Alexandria and set up near the RAOC depot at Abbassia. Unfortunately, the company had been dispatched so hastily that it arrived without tools or motor transport and it was not fully operational until November 1942. Eventually, the 525th Heavy Maintenance Company would become the only US Army unit integrated into the 8th Army and would remain under Montgomery's command for the duration of the North African campaign.[30]

As with the Grant tank, the 8th Army leadership decided to dole Sherman tanks out in squadron-size (16 Shermans each) allotments to 12 regiments, rather than concentrating them in fewer units. With the ascendency of the medium tank in the 8th Army, those tanks without 75mm guns tended now to be regarded as second-best or obsolescent. All of the 184 Crusader II (2-pounder), 37 Crusader CS (3-inch howitzer) and the 119 American-built Stuart (37mm gun) tanks were now re-categorized as 'light tanks', even though no such type formally existed in the British Army. Under the new armoured regiment organization issued in August 1942, the regiments in armoured divisions in the Middle East were authorized two 'heavy' squadrons, each with 16 Shermans or Grants, one 'light' squadron (equipped with Stuarts or Crusaders), and a headquarters squadron with four Shermans. Altogether, the new regimental organization yielded a nominal unit with 36 Shermans or Grants and 16 'light' tanks.[31] Standardization proved elusive in practice, with some units like 3 RTR possessing one squadron of Shermans, one of Grants and one of Crusaders.

Even the arrival in Egypt of 148 new Crusader III tanks (only 79 were operational by 23 October), equipped with a 6-pounder gun, did not change much. While the Crusader III possessed improved anti-tank firepower, better mechanical reliability and a low-profile silhouette, it was still a lightly armoured tank that could not absorb much damage and was not even particularly fast. The 6-pounder gun on the Crusader III was only provided with AP ammunition, since the APC round was still in development and no HE rounds had been issued yet. Rather than concentrate the Crusader III tanks in one or two regiments, they were split up among the 'light' squadrons, with most troops receiving one. Even the Free French tank company in XIII Corps was provided with three Crusader IIIs. Yet after a generally disappointing performance by the Crusader in North Africa, the War Office in London was in the process of merging the cruiser tank concept with medium tank features in order to produce a better mix of armoured protection, firepower and mobility for the next generation British tank; this trend would manifest itself with the appearance of the Cromwell tank in early 1943.



A Churchill Mk III from Kingforce, which briefly saw action at El Alamein. The Churchill was capable of absorbing enormous punishment and in Tunisia, it demonstrated remarkable agility over hilly terrain. (© Osprey Publishing Ltd, by Felipe Rodríguez. From NVG 321 *Allied Tanks at El Alamein 1942*)

Although the British Army had invested considerable time and effort in developing infantry tanks in the interwar period, they had not proved to be a major success in the desert, beyond the initial use of the Matilda against the Italians in 1940. By September 1942, the 'Queen of the Battlefield' had disappeared from front-line use in the 8th Army, aside from a handful of the Matilda CS version. Over 700 Valentines had been delivered to the Middle East and 8th Army still had 223 in October 1942, but the General Staff had already declared the design as obsolete.[32] All of 8th Army's Valentine tanks were the Mark II, III and IV versions, armed with the inadequate 2-pounder gun, which could not engage infantry or the latest German medium tanks. An upgraded Valentine Mark IX, armed with a 6-pounder gun, entered low-rate production in August 1942, but they were assigned to the 6th Armoured Division for Operation *Torch*. The Valentine Mark IX was expected to be better against German tanks, but it still could not fire an HE round and had no coax machine-gun (which had been removed to make space for the larger gun), which meant it was not really an infantry support tank. Given the harsh combat debut of the 23rd Armoured Brigade at Ruweisat Ridge in July, the 8th Army was not sanguine about the further usefulness of infantry tanks. Nevertheless, the new Infantry Tank Mark IV (Churchill) had been under development for two years and on 1 October 1942, three weeks before the British offensive, six arrived in Egypt.[33] However, the Churchill tanks arrived in Egypt without crews and 8th Army simply assigned surplus tankers to operate them under Major Norris King from 2 RGH. The detachment was referred to as 'Kingforce'; the crews had virtually no training on the new tanks.[34] The Churchill Mk III version, armed with a 6-pounder gun, was more than twice as heavy as the Valentine tank, but possessed about the same mobility. The main selling point of the Churchill was its very thick armoured protection – up to 89mm thick – which made it nearly invulnerable to the

German 5cm guns beyond 500 metres. However, the future of the Churchill tank was in doubt and its performance in North Africa would determine whether it had a place in the Royal Armoured Corps.

Tank losses were expected to be heavy in the upcoming battle, and the RAOC depots around Alexandria had an additional 182 tanks (including 50 mediums) that would soon be ready for issue. Another 100 medium tanks in the depots would be ready in due course.[35] Nevertheless, in order to fight a protracted tank battle, the 8th Army would need to be able to recover damaged tanks on the battlefield and efficiently pass them to the rear for repairs. Unlike 1940–41, when the 8th Army only had a handful of tank transporters, by October 1942 it had a total of six RASC tank transporter companies, each of which had an authorized strength of about 400 personnel and 108 tank transporters. Thus, even with with shortfalls and losses, the 8th Army had enough transporters to move or recover several brigades' worth of tanks. In addition to the Scammell Pioneer tank transporter, the American-made Diamond T (M19) transporters were also arriving in theatre – and they could carry any Allied tank in service.

Another area of great concern for Montgomery was in terms of the 8th Army's artillery. Although the 8th Army enjoyed a nearly 2 to 1 numerical superiority in field artillery over Panzerarmee Afrika, most batteries were equipped with 25-pounder (87mm) guns, which were badly outranged by the German 10cm and 15cm guns. Only three regiments were equipped with medium guns (a total of 48 114mm and 140mm guns). Furthermore, all of the British artillery was towed, which made it difficult for the Royal Horse Artillery (RHA) units in the armoured divisions to keep up in a mobile battle. Despite the fact that North Africa was a secondary theatre for the Wehrmacht, Rommel had still been provided with a total of 35 self-propelled artillery

By October 1942, the 8th Army had acquired a considerable number of Scammell Pioneer tank transporters, which could carry 30-ton medium tanks. Tank transporters are critical in desert operations to reduce wear and tear on armoured units involved in non-combat movements. (IWM E 18712)

The 8th Army also received a batch of M7 'Priest' 105mm self-propelled guns, which were used to equip the 11 RHA (HAC). The Priest had better firepower and mobility than the Bishop and was a valuable addition to the British 1st Armoured Division. (IWM, E18869)

pieces: two batteries of 15cm sIG 33 guns mounted on the Pz II chassis and four batteries of 15cm sFH 13/1 howitzers mounted on a French-built Lorraine 37L tractor. Even the resource-poor Italians had introduced the Semovente self-propelled gun in the desert. Consequently, the Middle East Command requested that the War Office should convert or purchase similar weapons and provide them as soon as possible to the 8th Army. By late summer, two types of self-propelled artillery pieces were en route to Egypt: the British-built 'Bishop' (a 25-pounder gun mounted on a Valentine chassis) and the American-built M7 'Priest' (a 105mm howitzer mounted on a Grant chassis). The first batch of Bishops arrived from England and 16 were assigned to the 121st Field Regiment, which supported the 23rd Armoured Brigade. The M7s arrived in early September and 24 were assigned to the 11 RHA (HAC), which supported the 1st Armoured Division.[36] More self-propelled guns were en route, but these two regiments would be the first test of mobile artillery in the British Army since the Birch guns were scrapped in July 1931.

Montgomery was also concerned with how the Royal Artillery was organized and used in combat, so in early September he brought Brigadier Sydney C. Kirkman, an artillery expert, out from England to take command of the 8th Army's artillery. Kirkman had served under Montgomery in England and he was tasked with improving the ability of 8th Army to mass its artillery on particular targets for maximum effect, which required a higher degree of centralization than had hitherto been the norm.[37] The ability of massed artillery to stop the Afrika Korps during the defensive battles at Ruweisat

Ridge and Alam Halfa Ridge had already been noted, but Montgomery assigned Kirkman to develop procedures for massing indirect fires in an offensive battle. In fact, the XIII Corps had already been experimenting with concentrating all corps artillery against one target – a technique dubbed 'Stonk' – which Kirkman readily adopted for 8th Army.[38] In the US Army, this artillery tactic would be called a 'time on target' (TOT) fire mission, which could be devastating. As yet, the Wehrmacht had not seen artillery used against their forces in this manner, not even on the Eastern Front.

In addition to field artillery, the 8th Army also witnessed a major increase in its anti-tank firepower during Montgomery's first month in command. The 6-pounder AT gun had been used at Gazala, Mersa Matruh and Ruweisat Ridge, but only in small numbers and usually in portee mode. By mid-October 1942, the 8th Army had received over 800 6-pounder anti-tank guns – enough to equip all anti-tank regiments with the weapon. The surplus 2-pounder guns were provided to each infantry battalion, providing them with some defence, at least against enemy armoured cars and light tanks. Auchinleck had claimed that infantry was useless in the desert against tanks, but that would soon prove to be false at El Alamein.

Finally, Montgomery sought to significantly improve the 8th Army's de-mining capabilities and tactics. In 1940, the Western Desert Force started its campaigns in North Africa with a tiny force of Royal Engineers (RE), just four field companies with about 600 engineers. In 1940–41, the 7th Armoured Division usually operated with only a single field company attached, providing it with a minimal capability to breach enemy obstacles (using Bangalore torpedoes and hand-clearing techniques). Non-divisional armoured units had no organic engineer support and had to rely upon corps-level assets (which were usually retained by the infantry divisions). Consequently, the armoured units in the 8th Army had negligible experience of operating with engineer units in manoeuvre battles – in contrast to the German Panzer-Divisionen, which each had their own *Panzer-Pionier-Bataillon*. By the time of Operation *Crusader*, the 7th Armoured Division had two organic RE field companies, but capabilities and tactics were still rudimentary. Prior to the Battle of El Alamein, the Axis minefields encountered by 8th Army engineers had been simple affairs – typically just 2–3 rows of mines, 30 metres across. Furthermore, tank-engineer cooperation to date had generally been poor, due to communications failures and lack of standardized markings for cleared lanes through minefields. At Ruweisat Ridge in July, the British sappers succeeded in creating some gaps in the enemy mine belt, but they were unable to communicate their location to the 23rd Armoured Brigade, which resulted in a disaster. In the three months after Ruweisat Ridge, Panzerarmee Afrika was able to create multiple rows of obstacle belts, up to 400 metres or more in depth, in front of its main strongpoints, each of which included a mix of both anti-tank and anti-personnel mines.[39]

Brigadier Frederick H. Kisch had been the 8th Army's chief engineer since 1941 and was directed by Montgomery in late August to establish a mine-clearing school to standardize training and procedures.[1] Brigadier Kisch also moved to improve tactical communications within the RE field companies, which heretofore had proved unreliable in battle. By the time that 8th Army attacked at El Alamein, Montgomery would have the equivalent of roughly 16 engineer battalions (over 8,000 personnel) at his disposal. In addition to a ten-fold increase in manpower, Brigadier Kisch incorporated new mine-clearing technology into RE squadrons. A Polish army officer in England, Lieutenant Jozef Kozacki, had developed an electronic mine detector in mid-1941, which was standardized as the Mine Detector 4A in 1942; 500 were immediately sent out to Egypt. While not entirely reliable, the mine detector did speed up the clearing process (although the detectors could be fooled by metal scrap). Another hopeful innovation was the creation of Matilda Scorpion flail-tanks, which could be used to detonate mines with a rotatory chain-swinging device attached to the hulls of surplus Matilda tanks. A total of 25 Matilda Scorpions were assigned to the 1st Army Tank Brigade (42 RTR, 44 RTR) just prior to the Battle of El Alamein. Altogether, the 1st and 10th Armoured Divisions would each have eight RE field companies in direct support and each corps would have additional assets in mine-clearing task forces.

During the six weeks after the Battle of Alam Halfa, the 8th Army worked relentlessly to integrate over 40,000 replacements into its depleted combat units and to conduct both individual and unit-level training. Given the high operations tempo for most of 1942 and heavy losses, training had generally taken a back seat in the 8th Army, which Montgomery was keen to correct. Casualties had a particular impact on armoured units, which simply could not function without well-trained crews. While a British armoured regiment was authorized a nominal strength of 503 personnel, including 34 officers, most front-line units had suffered between 25 and 50 per cent casualties in June–July. Replacements arriving from England required considerable acclimatization and individual training before they were ready to join front-line combat units. Many of the armoured units, like 3 RTR, focused on practising night minefield breaching drills with RE companies until they became proficient at the task. As Lieutenant Peter Ross, a troop leader in A Squadron, 3 RTR, noted:

> Exercise after exercise, day in, day out, practising the same things all the time until we could do them in our sleep. Our main exercise was to learn how to go through a minefield at night and fan out into battle positions at dawn. Later, the sweat, tedium and fatigue of those weeks resulted in the enemy's shock at our speed in crossing his minefields.[40]

Four of the Yeomanry regiments in the 8th and 9th Armoured Brigades, which would be spearheading the offensive, had no prior combat experience and extremely limited training on tanks. Efforts to conduct armour

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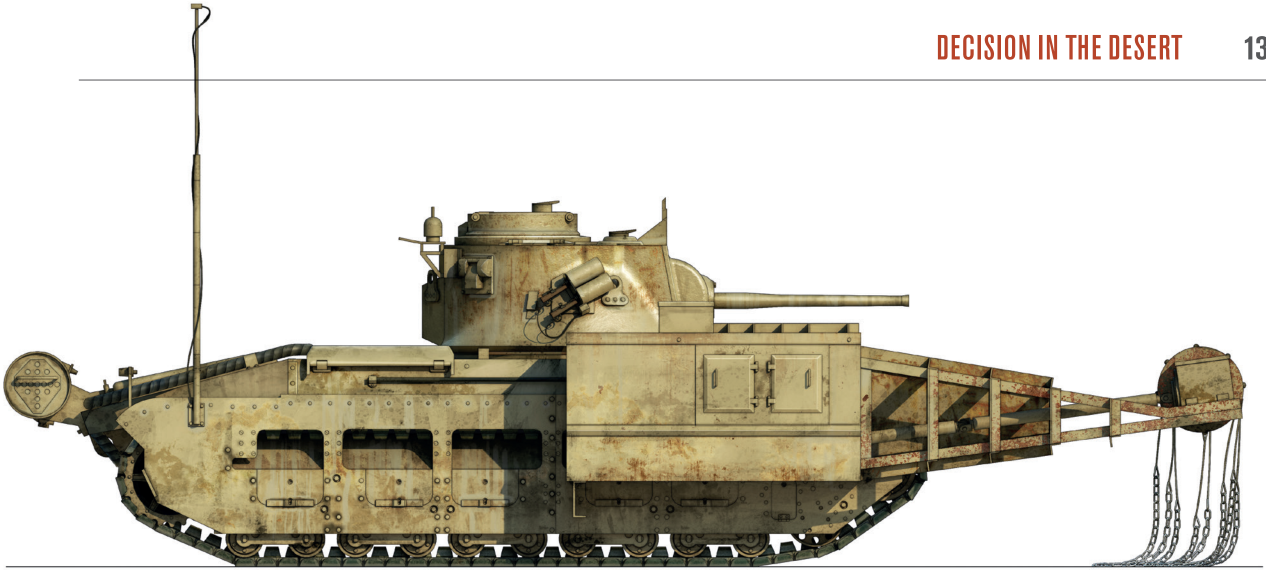
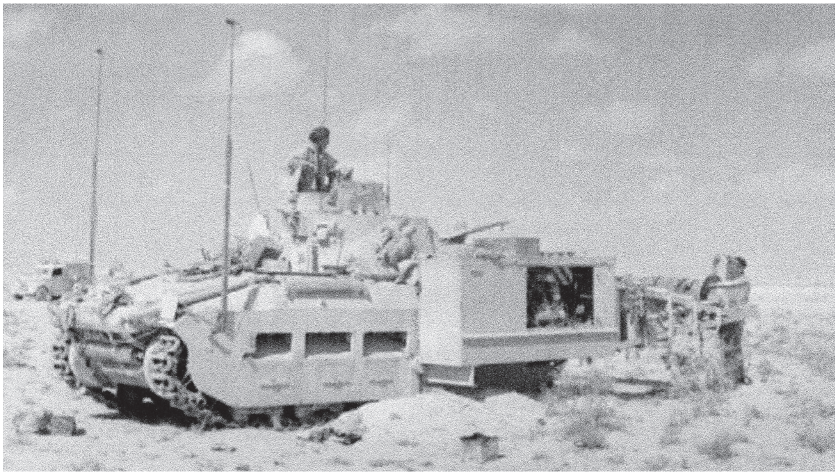
[1] Kisch was the highest-ranking Jewish officer in the British Army and a Zionist leader in Palestine. Ironically, he would be killed by a German mine at the Battle of Wadi Akarit in April 1943.



conversion training in theatre in 1941–42 had been undermined by constant diversions of personnel to other non-essential tasks, such as guarding warehouses or manning searchlights in Alexandria. Auchinleck, as theatre commander in 1941–42, bears some of the blame for this inadequate armour conversion training, which was not given sufficient priority. For example, the Royal Wiltshire Yeomanry (RWY) had been sent to Palestine in 1940 as part of the 4th Cavalry Brigade and spent much of 1940–41 as a rear-area garrison unit. The RWY did not begin conversion to an armoured unit until it was sent to Khataba camp, outside Cairo, in May 1942. Initially, the RWY was only provided four Stuarts and a few Crusaders for training.[41] By 10 August, the RWY received one Grant and one Lee, in addition to its 15 Crusaders; all the tanks were battle-damaged vehicles, recovered from the battlefield. Eventually, the RWY received more Grants and a total of ten Shermans in late September, just a month prior to Operation *Lightfoot*. The other three Yeomanry regiments went through similar experiences, which left them poorly prepared to go up against veteran German tank crews.

The Matilda Scorpion was an early attempt to create an armoured mine-clearing vehicle, using available resources. At El Alamein, the Scorpions were only moderately effective but they were followed by improved armoured engineering vehicles in 1943–44. (© Osprey Publishing Ltd, by Felipe Rodríguez. From NVG 321 *Allied Tanks at El Alamein 1942*)



The 8th Army workshops converted 24 Matilda II tanks into ‘flail’ tanks known as Scorpions. The Scorpion was developed to assist with breaching minefields under fire, but the device quickly broke down in use and visibility inside the tank while operating the flail was virtually nil. (Author’s Collection)

While Montgomery was assembling the leaders, equipment and training soldiers for a new offensive by the 8th Army, he also had to be developing the plans for them to execute. Unlike many senior commanders, Montgomery provided detailed guidance on his intentions early in the planning process, then relied upon his staff to convert the concept into a workable plan. Early on, Montgomery rejected the idea of conducting any fancy manoeuvres to try to outflank the enemy (which he knew was not really feasible at El Alamein due to the Qattara Depression) and instead focused on a massive breakthrough attack in the north, near Miteirya Ridge. Although he could not achieve the recommended 3 to 1 numerical superiority over the enemy, he intended to stack the deck in his favour with combat multipliers – artillery, air support, engineers, logistics – and fight a battle of attrition that he knew from ULTRA that the enemy could not afford. Montgomery's basic concept was for a three-phase operation: (1) a one-day breaching attack by the infantry of XXX Corps to create two penetration corridors in the enemy mine belts, (2) an extended 'dogfight', whereby XXX Corps defended its bridgeheads across the mine belts from enemy armoured counterattacks, and (3) a breakthrough attack by the massed armour in X Corps that completely ruptured the enemy line, thereby causing a general withdrawal.[42] On 13 September, Montgomery wrote 'Memorandum No. 1' which provided more detailed guidance on the offensive. The first phase of the operation was designated Operation *Lightfoot*, while the breakthrough battle was designated Operation *Supercharge*. A preliminary deception effort was named Operation *Bertram*. Montgomery's entire plan of attack would revolve around the ability of the engineers to efficiently breach dense enemy minefields and for the armoured units to move through clearly marked secured lanes before the enemy could react – a tough act against a veteran opponent like the Afrika Korps.

Lieutenant Colonel Charles Richardson was responsible for the initial planning effort for *Lightfoot* and he identified the optimum time and place for the breaching attacks. A full moon period in late October was recommended, since the natural illumination would assist the breaching operations.[43] Although Montgomery allowed his staff to develop the details of the plan, he continued to expand and modify the scope of the operation. As initially envisioned, *Lightfoot* involved four infantry divisions (2 NZ, 9 AUS, 1 SA, 51) from Leese's XXX Corps mounting a night attack north of Miteiriya Ridge, across an 11,000-metre-wide corps frontage. In one night, the corps was expected to advance 5,500 metres and create two cleared penetration corridors through the enemy mine belts for the follow-on armour, as well as eliminating the majority of the enemy anti-tank and artillery positions along the way to the final infantry objective line, dubbed 'Oxalic'. Valentine tanks from the 23rd Armoured Brigade would operate in direct support of the XXX Corps infantry, with one regiment assigned to support each division. However, Freyberg wanted additional armoured support for his 2nd New Zealand Division, which had been reduced to just two infantry brigades, and he was assigned the 9th Armoured Brigade (a total of 118 tanks) for the duration of

The 8th Army received one regiment of Bishop 25pdr self-propelled guns, mounted on a Valentine chassis, in September 1942. The Bishop proved to be an unsatisfactory expedient and was replaced by the Sexton in mid-1943. (IWM, E17430)

Lightfoot. The attack would also be supported by the bulk of 8th Army's artillery and plentiful close air support from the RAF. Nevertheless, the initial plan for *Lightfoot* was unduly bold and optimistic from the start, assuming that XXX Corps could quickly mop up all resistance in an area that was about 60 square kilometres in size in one night. Once the corridors were cleared, Montgomery intended to push Lumsden's X Corps through and advance beyond 'Oxalic' to the 'Pierson' Line. At that point, he intended to shift to the tactical defence, trusting to the combination of air, anti-tank, artillery and tank firepower to shred the inevitable counterattacks by the Panzerarmee Afrika's mobile reserves. Yet the most glaring flaw in Montgomery's planning was the lack of detail concerning the exploitation phase, which was extremely vague. Even if the enemy armoured reserves were depleted, it was unclear what X Corps was supposed to do in the final phase – somehow the British armour was supposed to break through. As part of the modified plan, Horrocks' XIII Corps was also expected to mount diversionary attacks in the south in hope of drawing off some enemy armour reserves in that direction, which was also rather optimistic.

The *Lightfoot* plan was sufficiently advanced for XXX Corps to begin division-size rehearsals on the night of 26/27 September. Three more rehearsals followed and the 23rd Armoured Brigade participated in them, which helped to increase tank-infantry cooperation. The two armoured divisions also rehearsed their role in the operation, including conducting night road marches and forward passage of lines. However, the infantry divisions of XXX Corps and the armoured divisions of X Corps rehearsed separately and did not practise coordination with each other, which would prove problematic in battle.[44] The rehearsals demonstrated that the minefields could be breached fairly quickly, assuming everything went well, but it was questionable how soon X Corps could exploit through the corridors. As problems appeared during the rehearsals, Montgomery began to scale back his expectations of what 8th Army could accomplish in the time available and decided to adopt a more cautious and methodical approach. Updated intelligence estimates had already informed Montgomery that Panzerarmee Afrika was steadily improving its defences and would be much more difficult to smash than the flimsy Italo-German line that Auchinleck nearly blew through in July – it was not going to be an easy battle. Montgomery added further guidance for the planners on 6 October, which introduced the use of the term 'crumbling' attacks, which were intended to gradually reduce the enemy infantry positions around the two penetration corridors. Once the Axis armour responded to the Allied attack, Montgomery fully expected a protracted battle of attrition, which he referred to as a 'killing match'. In terms of the principles of war, *Lightfoot* was particularly strong in terms of objective and mass, moderate in terms of surprise, but rather weak in terms of manoeuvre and flexibility.

The 8th Army 's armoured leaders – Lumsden, Gatehouse and Briggs – were less sanguine about their ability to quickly push their units through the penetration corridors, deploy and then win an armoured battle of attrition with Panzerarmee Afrika. A rehearsal exercise at the X Corps headquarters indicated that the armour would likely become bunched up in the penetration corridors if an attempt was made to push the corps through on the first night of *Lightfoot*. Lumsden in particular doubted his corps could accomplish its objectives under these conditions.[45] Indeed, Gatehouse sensibly recommended not committing X Corps until the second night of the operation, but Montgomery discounted these objections.[1] In doctrinal terms, Montgomery was starting with the British 'bite and hold' attacks of 1918 and Fuller's vision of Plan 1919 as models, updated for modern weaponry. The 8th Army was about to launch the largest combined arms offensive in its history (involving five armoured and 16 infantry brigades in the first echelon) after spending most of the last year bungling one brigade-size attack after another. *Lightfoot* was a decent plan, but Montgomery was trying to cram too much of his army into too small an area, a mistake he would repeat with Operation *Goodwood* in July 1944, when he pushed three armoured divisions into the tight Orne River bridgehead. Montgomery simply did not appreciate that an armoured exploitation could not begin at a scheduled time, but only once the enemy's fixed defences were clearly disrupted.

On the other side of the line, Panzerarmee Afrika, under Stumme, worked to improve its defences, recognizing that its survival was at stake. The Axis forces were tasked with conducting a linear defence for an extended period of

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[1] Gatehouse had consistently advised against the misuse of armour since Operation *Crusader* and had been consistently ignored or overruled, which speaks volumes about how RTR officers were regarded by the rest of the British and Indian Army leadership.

The introduction of electronic mine detectors enabled Royal Engineer sappers to quickly create breaches in the extensive minefields that became commonplace in North Africa by mid-1942. (Battlefield Historian, BHC 01326)

time, with limited logistic support and under conditions of enemy air superiority. For the first time in the Second World War, the German Heer would turn to the large-scale employment of mines to protect itself from an enemy. Oberst Hans Hecker, the Pionierführer (commander of engineers) Panzerarmee Afrika, was able to lay over 455,000 mines in just three months in front of the Axis positions. The mines included a mix of German-made Teller anti-tank mines (T.Mi.35), German S-Minen anti-personnel mines, Italian-made AP and AT mines, captured British mines and even a few French mines. The Axis main line of resistance (*Hauptkampflinie* or HKL) was held by a mixed Italo-German force, with the Italian XXI Corps in the north and the Italian X Corps in the south; altogether, this comprised 30 Italian and 12 German infantry battalions.

In the 14km-wide sector between Miteirya Ridge and Tell el Eisa where Montgomery intended to conduct his main effort, the HKL was held by the German 164. leichte Division and the Italian 'Trento' division with a total of nine infantry battalions (five Italian and four German). The German and Italian battalions were intermixed (referred to as 'corseting') in order to ease German concerns about the risk of a catastrophic collapse in battle. Each battalion, reinforced with anti-tank guns and light artillery, was responsible for defending about a 1,500-metre-wide sector, with about a company deployed in a forward outpost line. Mine boxes were also created in between strongpoints in order to help channel enemy attackers. The two Axis divisions were provided with 70 5cm anti-tank guns and eight 8.8cm Flak guns, as well as 16 Marder III tank destroyers with 76.2mm guns. Artillery support in this critical sector consisted of 28 10.5cm field guns, 12 15cm towed howitzers and eight self-propelled 15cm howitzers.[46] Compared to the southern end of the Axis front at El Alamein, which was more thinly stretched, the defences in the north had some depth and would not be easy to rupture.

Panzerarmee Afrika kept all its mobile units behind the HKL, ready to respond to a British offensive. Rather than a concentrated armoured reserve, as in previous defensive battles, the DAK and Italian XX Corps were divided: the 15. Panzer-Division and 'Littorio' division provided tactical reserves for the XXI Corps in the north, while the 21. Panzer-Division and 'Ariete' division served in the same capacity for the X Corps in the central and southern sectors. The two motorized infantry divisions, the German 90. leichte Division and the Italian 'Trieste' division, were kept further back as operational-level reserves. Despite the fact that North Africa was a secondary theatre of operations, the OKH had not been stingy with sending replacement equipment to Panzerarmee Afrika, and by mid-October the DAK possessed 239 operational tanks, including 86 Pz III Ausf J/L and 30 Pz IV Ausf G. Indeed, the 15. and 21. Panzer-Divisionen were equipped with more and better tanks than any German Panzer-Division on the Eastern Front at this point.[47] Amazingly, when Rommel met with Hitler on 1 October, he was promised that the Afrika Korps would receive a detachment of Tiger heavy tanks in the near future – a clear demonstration that his command enjoyed a favoured status. The DAK also possessed a total of 34 Marder III tank destroyers and several batteries of self-propelled 15cm howitzers. Likewise, the Italian XX Corps had been reinforced and it had 278 operational medium tanks, as well as 36 Semovente da 75/18 self-propelled guns. In theory, with over 500 AFVs to defend a front that was less than 60 kilometres in width, Panzerarmee Afrika should have been in excellent shape to repel an Allied offensive. On the Eastern Front in late 1942, a sector of this width would be fortunate to have a single Panzer-Division with 50–60 tanks in tactical reserve. However, Axis armoured capabilities, while excellent on paper, were undermined by inadequate theatre logistics and the time–distance factors involved in trying to conduct a campaign with such extended lines of communication. Indeed, it is difficult in the entirety of modern military history to find an army that chose to fight so far from the ports upon which it depended for its very survival.

The Italian logistical infrastructure upon which Panzerarmee Afrika depended for its supplies simply could not sustain a large mechanized army in Egypt. The distance from the port of Tripoli to El Alamein was over 1,800 kilometres, which required an enormous fleet of trucks to push supplies forward. Even with the use of Benghazi and the recapture of port facilities in Tobruk and Bardia, the Italians lacked the means to provide Panzerarmee Afrika with more than about one-third of its monthly supply requirements. Allied air and naval interdiction also continued to inflict significant losses upon convoys, adding to the problem. In mid-October, Panzerarmee Afrika

One of the Churchill tanks from Kingforce at El Alamein. The crewman at the front is cutting barbed wire out of the tracks – a miserable task. (IWM, E19105)

had three V.S. of fuel on hand for its tanks (although not all of it was at the front) and 8–10 basic loads of ammunition, meaning a few days' fighting and not much manoeuvreing.[48] The scarcity of fuel forced Panzerarmee Afrika to fight a non-doctrinal battle, using tanks primarily in local counterattacks to prevent breakthroughs. Although the Luftwaffe was capable of moving small quantities of fuel forward in emergency situations, this was only a temporary fix. Had Panzerarmee Afrika been able to shorten its supply lines by withdrawing to the Libyan–Egyptian frontier, the logistic situation would have improved somewhat – but that was politically impossible. With Panzerarmee Afrika holding a strong defensive line at El Alamein, neither Hitler nor Mussolini would have approved a voluntary retreat from Egypt, since it would be regarded by their domestic populations as a strategic defeat. Thus, Rommel's imprudent advance had placed Panzerarmee Afrika into a die-in-place mission, which was inevitably doomed to fail.

As if the 8th Army's impending offensive was not bad enough for Panzerarmee Afrika, its strategic position was soon to get much worse. Unknown to both the OKH and the Commando Supremo, Major General George S. Patton Jr's 1st Armoured Corps was already loading elements of the 1st Armored Division onto a convoy at Hampton Roads, Virginia.[49] The convoy would sail eastwards across the Atlantic on the day that Operation *Lightfoot* began and would rendezvous with other Allied convoys in order to conduct Operation *Torch*, the amphibious landings in Vichy French-controlled Algeria and Morocco. *Torch* was expected to occur on 8 November, with elements from six American and one British division participating in the initial landings. The Anglo-American leadership expected minimal resistance from the Vichy French forces, which would enable a rapid build-up of forces ashore, followed by a dash eastward to seize the port of Tunis. Operation *Torch* was expected to complete the destruction of Panzerarmee Afrika by overrunning the Axis logistical base in western Libya. Hitler and the OKH had not expected the US Army to be a serious factor in the European theatre of war until at least mid-1943 or later, a strategic assumption that would prove disastrously wrong.

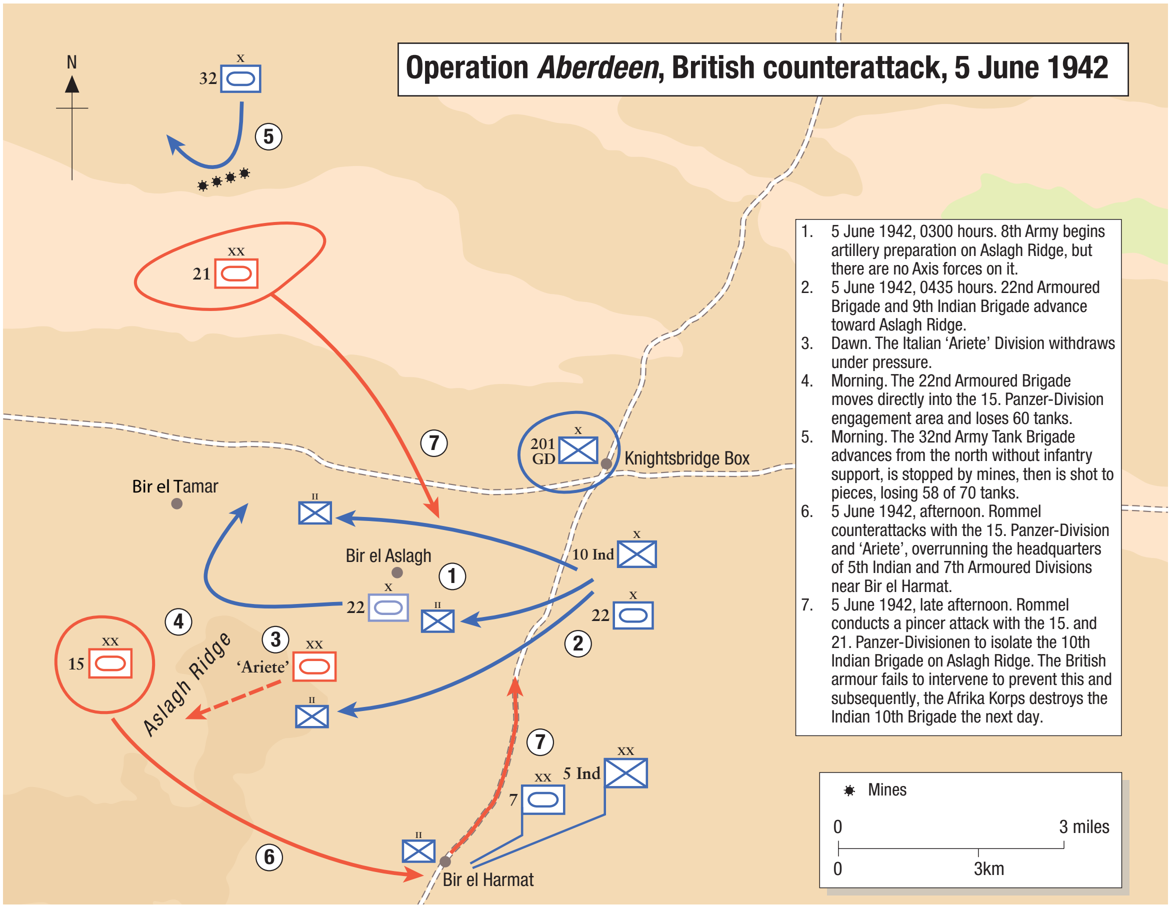
Patton's 1st Armored Corps would land in North Africa with the lead elements of the 1st and 2nd Armored Divisions, with the rest to be brought in as soon as ports were secured. The arrival of elements from two US Army armoured divisions in North Africa would be a game changer, since even if Panzerarmee Afrika could avoid being defeated by the 8th Army's impending offensive, it could not simultaneously fight in two directions. Most of the Axis combat units in North Africa were deployed in Egypt, facing the 8th Army at El Alamein; there were no appreciable theatre reserves. Maresciallo Ettore Bastico, the Italian theatre commander, had some Italian units protecting the long lines of communication from Tripoli to the El Alamein front, but the only significant unit was the 16ª Divisione motorizzata 'Pistoia', guarding the Bardia–Sollum–Halfaya Pass triangle; the division had only recently arrived in-theatre and it was mostly equipped with obsolete and/or captured weapons and vehicles. The grandiloquently named 136ª Divisione Corazzata 'Giovani Fascisti', also assigned to guard lines of communication, was in fact an infantry regiment equipped with a few AB41 armoured cars. Small garrisons also held Benghazi, Tripoli and Tobruk, but none of these had significant mobile elements that could respond to an Allied landing in Algeria and Morocco. Since Panzerarmee Afrika would be over 2,600 kilometres away from the nearest Allied landings in Algeria, the only Axis forces that might be able to respond were units in Italy or France.

LIGHTFOOT: OCTOBER 1942

'I am prepared for 100 per cent casualties.'

Montgomery, prior to the offensive

On the evening of 23 October, the sun set at 1820 hours, but even before that moment, the formations of Leese's XXX Corps were already moving forward to their attack positions along the forward line of troops. Further back, the X Corps began moving forward from their assembly areas near El Alamein station towards the front, then through gaps in the friendly minefields, in single file – altogether, over 1,000 tanks, armoured cars and universal carriers, plus hundreds of other motor vehicles. Zero hour was set for 2200 hours. At Z-20 (2140), the entire artillery of the 8th Army fired an 882-gun Time on Target (TOT) mission, with all rounds impacting



Operation *Aberdeen*, British counterattack, 5 June 1942

1. 5 June 1942, 0300 hours. 8th Army begins artillery preparation on Aslagh Ridge, but there are no Axis forces on it.
2. 5 June 1942, 0435 hours. 22nd Armoured Brigade and 9th Indian Brigade advance toward Aslagh Ridge.
3. Dawn. The Italian 'Ariete' Division withdraws under pressure.
4. Morning. The 22nd Armoured Brigade moves directly into the 15. Panzer-Division engagement area and loses 60 tanks.
5. Morning. The 32nd Army Tank Brigade advances from the north without infantry support, is stopped by mines, then is shot to pieces, losing 58 of 70 tanks.
6. 5 June 1942, afternoon. Rommel counterattacks with the 15. Panzer-Division and 'Ariete', overrunning the headquarters of 5th Indian and 7th Armoured Divisions near Bir el Harmat.
7. 5 June 1942, late afternoon. Rommel conducts a pincer attack with the 15. and 21. Panzer-Divisionen to isolate the 10th Indian Brigade on Aslagh Ridge. The British armour fails to intervene to prevent this and subsequently, the Afrika Korps destroys the Indian 10th Brigade the next day.

simultaneously; about two-thirds of the rounds fell in the northern sector of the front, the rest in the centre-south to support the deception plan. While the 25-pounder guns focused on suppressing enemy front-line positions, the three regiments of medium artillery (with 32 114mm and 16 140mm guns) fired a five-minute counterbattery mission against known enemy heavy artillery positions, placing 96 rounds on each enemy battery.[50] Then once Z-hour arrived, the RAF joined the bombardment, with two squadrons of Wellington bombers dropping 125 tons of bombs on to enemy artillery positions as well. The artillery preparation lasted for 30 minutes, but there was no enemy response to the 8th Army's preparation. For the first time, the 8th Army also used electronic jamming to try to disrupt enemy wireless communications. At Zero hour, the eight brigades of infantry from XXX Corps began their advance (one other brigade was used in a diversionary attack on the coast).

For the most part, the XXX Corps infantry attacks went very well, in part because the Axis had not deployed many troops forward of Miteirya Ridge.

The enemy outpost line was lightly held by a few companies, but was still able to inflict significant casualties on some units. A total of four phase lines were employed by XXX Corps to chart the progress of advance, beginning with Green, Red, and Black for the intermediate objectives and Blue (Oxalic) for the final objective. Six of the eight attacking infantry brigades reached phase line Blue by around 0400 hours. The sappers with the forward infantry battalions cleared 7-metre-wide lanes, adequate for troops on foot, but not tanks. On the right flank, the Australians did fairly well, overrunning one Italian infantry battalion and nearly reaching the edge of Kidney Ridge before dawn, but the 20th Australian Brigade failed to reach the Blue line. The inexperienced 51st (Highland) Division – which went into battle with its bagpipes playing – had more trouble when its 153rd Infantry Brigade was held up by resistance from one German infantry battalion and a very dense minefield. Consequently, the penetration corridor for the 1st Armoured Division, which lay in this sector, was not fully cleared during the night. The biggest success was achieved on the XXX Corps' left, where the New Zealanders and South Africans succeeded in capturing a good portion of Miteirya Ridge during the night, which secured the penetration corridor for the 10th Armoured Division. The attached Valentine tanks from 23rd Armoured Brigade proved of negligible value in the night attack, since the mines generally prevented them from keeping up with the infantry. The 50 RTR supporting the 51st Highland Division lost five tanks on mines and to hostile fire.[51] Casualties among the first-wave infantry were fairly heavy – up to 30 per cent in some battalions – but the enemy outpost line had been mostly overcome by about 0400 hours on 24 October. Overall, the four infantry divisions suffered about 2,000 casualties in the first 24 hours of *Lightfoot*, while taking 954 prisoners.[52] During the remainder of the night, the XXX Corps was able to move its anti-tank guns forward to support the front-line infantry and dig in prior to sunrise at 0620 hours.

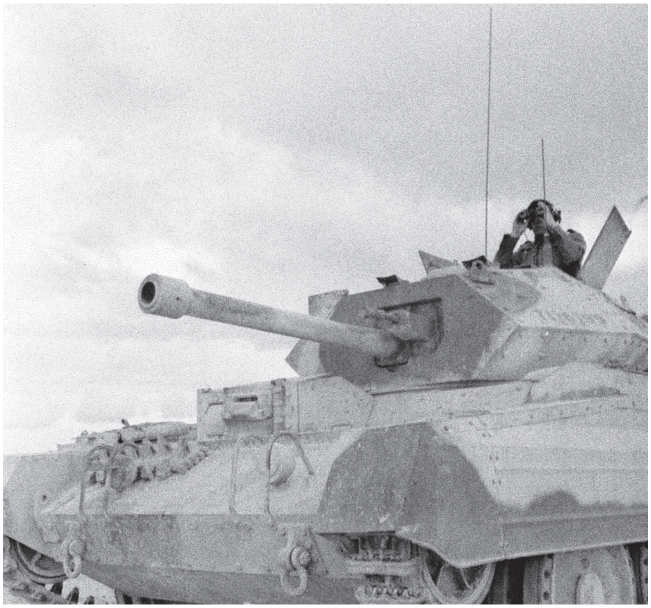
Each of the assaulting divisions was provided with a troop of Scorpion flail tanks, but these experimental devices tended to overheat and break down quickly under actual combat conditions. Even when the flail tanks were functional, the crew was completely blinded by dust, debris and exploding mines, which made it impossible for them to follow any kind of path. The noise that the Scorpions generated also helped the enemy to identify breaching teams, who were then targeted by mortars and machine-guns. In time, flail tanks would be improved and made useful in mine-clearing operations, but in October 1942 they were still far too primitive and unreliable to contribute much. Instead, the sappers relied upon mine detectors and clearing mines by hand.

Lumsden's X Corps began to move forward around 0200 hours on 24 October, with their attached RE companies doing their best to widen the narrow cleared lanes to at least 15 metres wide.[53] In the 1st Armoured Division sector, Fisher's 2nd Armoured Brigade began moving east behind the 51st Highland Division, with the Queen's Bays and 9th Queen's Royal Lancers trying to move along parallel tracks (the 'Sun' and 'Moon' tracks), unaware that the corridor ahead was not fully clear. At the head of the columns, a special divisional mine-clearing task force with three companies of sappers, supported by infantry and a dozen tanks, worked feverishly to widen the tracks, often while under fire from nearby enemy positions. Nor did the sappers in this group have functioning mine detectors – one of the common friction elements in war, critical equipment not being available where it is needed most.[54] When tank squadrons finally did begin to move along the cleared lanes in single file, they threw up considerable amounts of sand and dust, which reduced visibilty to just a few metres and made it difficult to see the green and amber lights marking the edges of the lanes. Chaos and confusion reduced the advance of Fisher's brigade to a crawl. Five Shermans from the Queen's Bays were immobilized by mines, and by dawn, the the regiment had only reached phase line Black, which was 3,000 metres short of Oxalic objective line.

Custance's 8th Armoured Brigade was more successful, following in the tracks of the New Zealanders, but at dawn it was still only halfway through the minefields. As the sun began to rise, Lumsden's X Corps found itself strung out in long, crawling columns, surrounded by mines and unable to manoeuvre – an incredibly poor tactical situation for 8th Army's main strike force. Lieutenant Bill Close, leader of a troop of Crusader II tanks in Major Bob Crisp's A Squadron, 3 RTR, was one of the junior tank leaders near the front of the 10th Armoured Division column:

> We were told to advance, with two lanes through the minefield to negotiate before we could open up and move on to our first objective of the [Miteirya] ridge. I gave orders on my radio to advance and, with 3 Troop behind me, moved slowly forward into the taped lanes that the sappers had made. I could see sappers still clearing mines on either side of us and I was being pressed by the CO to get a move on. We had only progressed about two hundred yards when a sapper stopped me and told me that his section had been practically wiped out and that the way was not cleared…We could also see the havoc that the enemy machine-guns had wreaked on them: there were bodies everywhere. The barrage opened up again, enemy aircraft dropped flares and suddenly everything seemed to happen at once. The aircraft were dropping their bombs; two landed close to my tank and rocked it on its bogies. I felt several pieces of shrapnel hit the tank and I sank a bit lower in the turret. Solid shot was also flying around and I could see several tanks to my rear had been hit, with their crews bailing out.[55]

Aside from a few Valentine tanks attached to XXX Corps, the only significant armoured unit to make it across the minefields by dawn was Brigadier John Currie's 9th Armoured Brigade, attached to Freyberg's 2nd New Zealand Division. The lead regiment, Lieutenant Colonel Peter T. W. Sykes' Royal



In October 1942, the 8th Army received the first batch of Crusader III tanks equipped with a 6-pounder L/43 gun. Usually each troop of Crusaders received one of the 6-pounder variants. (Author's Collection)

Wiltshire Yeomany (RWY), lost six Shermans and three Grants getting through the mines, but thanks to help from infantry clearing teams, managed to reach the northern slope of Miteirya Ridge with A and C Squadrons (18 tanks) just after 0600 hours. The RWY thus was not only the first armoured unit to reach the Oxalic line, but it would make the furthest advance of any British armoured unit on the first day of *Lightfoot*. However, the RWY was soon engaged by enemy anti-tank guns, and Sykes unwisely accepted a duel in which his tanks were stationary and exposed in the open. German 5cm and 7.62mm anti-tank guns pounded the British armoured regiment, along with artillery fire. Sykes' tanks were gradually knocked out and by 0745 hours, he was badly wounded by shell splinters. At one point, a German officer found the radio frequency used by the RWY and taunted them in English, saying 'How nice it is to see all your beautiful new tanks burning!' By noon, only four of the RWY's original 27 medium tanks were still in action, but Currie did not allow the devasted unit to pull back until 1800 hours.[56] The regiment was sent to the rear to re-equip. The Warwickshire Yeomanry also succeeded in reaching Miteirya Ridge to the left of the RWY, but moved into an uncleared minefield and lost six tanks, causing it to pull its remaining 40 tanks back behind the infantry. The 3rd Hussars, in reserve, did not reach the ridge and came under enemy artillery fire by 0630 hours. Thus, some 55 tanks from the 9th Armoured Brigade and four New Zealand infantry battalions held the environs of the western end of Miteirya Ridge. The ridge itself was not a sharply defined feature but a gradual inclined slope, devoid of cover except occasional clumps of camel thorn; any vehicles that moved over the flat crest were engaged by the enemy positions on the opposite slope or valley beyond. By mid-day, Miteirya Ridge was crowded with men, vehicles and equipment.

After sunrise, Custance's 8th Armoured Brigade managed to make some progress through the third enemy mine belt, and both the Staffordshire Yeomanry and the Nottinghamshire Yeomanry advanced forward to reach the eastern crest of Miteirya Ridge. After losing nine Crusader tanks to mines, the Staffordshire Yeomanry reached the ridge and nestled into hull-down positions near the New Zealand 5th Infantry Brigade. The Nottinghamshire Yeomanry (Sherwood Rangers) moved incautiously right up to the crest of the ridge, apparently sky-lining themselves, unaware that German anti-tank guns were on the other side. The German gunners engaged the Notts at point-blank range, quickly knocking out 16 tanks (eight Grants, eight Crusaders):

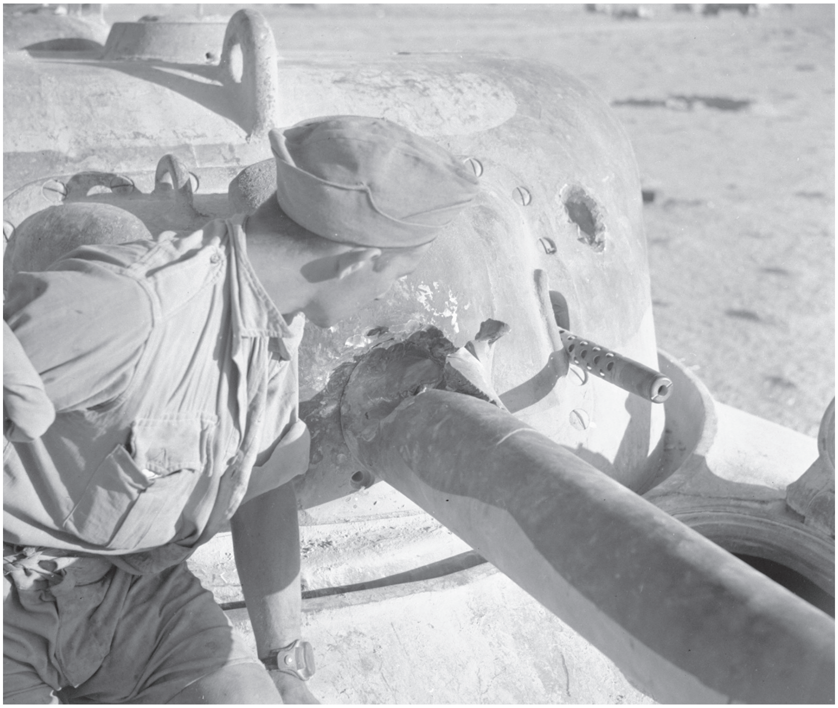
> Suddenly all hell broke loose. Every kind of tracer fire came flying towards us from all directions. The tank crews waiting behind in the packed gaps through the minefield saw armour-piercing tracer shells screaming from all over the place towards A Squadron's tanks – then the explosions of tanks blowing up, sheets of flame as they caught fire, and the dull cherry red of red-hot tank turrets.[57]

On the Axis side, Stumme had been listening to the sound of battle all night, but the fragmentary reports coming in were vague or incomplete (which often occurs when units are being overrun). He was aware that the 'Trento' division and 164. leichte Division were hard-pressed and that the HKL in their sectors was in danger of being breached. In fact, the 62º Reggimento Fanteria had lost two of its battalions and one German battalion (II./G.R. 382) had been crushed, creating a gap in the HKL between Kidney Ridge and Miteirya Ridge. Stumme's tactical reserves in this sector consisted of von Vaerst's 15. Panzer-Division and Generale Gervasio Bitossi's 'Littorio' division, which were subdivided into three battlegroups (Nord, Mitte and Süd/northern, central and southern). Although the German and Italian armour was supposed to work together, no single battlegroup commander was appointed since the Italian tankers refused to operate under German command – so unity of command was jettisoned from the start.

Around 0300 hours, Stumme ordered von Vaerst to commit the Süd Kampfgruppe to prevent an enemy breakthrough on Miteirya Ridge, in the area designated as Minebox L. The Süd Kampfgruppe consisted of Hauptmann Otto Stiefelmayer's I./Pz.Regt. 8, II./Panzergrenadier-Regiment 115 and a Panzerjäger detachment, as well as Capitano Constanzo Preve's XII Btgl. Carri M., a group of Semovente self-propelled guns and a battalion of Bersagliere. It was the commitment of this reserve which prevented the New Zealanders from expanding their lodgment on Miteirya Ridge and which engaged British tanks that appeared along the ridgeline.[58] Freyberg, the New Zealand commander, wanted the British armour to continue advancing past Miteirya Ridge but Stiefelmayer's Panzers made this impossible. The duel between Stiefelmayer's small number of Pz IV Ausf Gs (about 6–7) and the Shermans of the 9th Armoured Brigade was the first tank action involving both these tanks arrayed against each other. However, the Allied tanks were in a poor tactical position (skylined, with the sun rising behind them) and had difficulty putting effective fire on Stiefelmayer's tanks, while also under persistent fire from artillery and anti-tank guns. As a result, Stiefelmayer lost only two of his tanks in the opening duel on Miteirya Ridge, against 27 lost by the British.

Soon after the commitment of the Süd Kampfgruppe against the New Zealanders on Miteirya Ridge, Stumme decided to send elements of the Mitte Kampfgruppe to oppose the advance of the Australian Division and the 51st Highland Division into Minebox J. Around 0715 hours, Hauptmann Siemens' II./Pz.Abt. 8, Tenente Colonnello Rocco Casamassima's IV Btgl. Carri M. and the DLVI Gruppo Semoventi moved forward of Kidney Ridge and began long-range skirmishing with some Allied tanks and Australian infantry.[59] Siemens did not press the attack, since his mission at this point was merely to prevent an enemy breakthrough and it was clear that the Allied forces were still hung up in the mines.[60] Back in his command post, it was difficult for Stumme to assess where the Allied *Schwerpunkt* (main effort) was developing, so he was reluctant to commit any more of his tactical reserves. Frustrated by the lack of accurate information coming from the forward units, Stumme decided to drive forward to the 164. leichte Division command post around 0930 hours. Due to one of the unexpected hazards of war, his staff car bumped into Australian infantry and was fired upon. Stumme fell out of the escaping vehicle and apparently died of a heart attack; for nearly 24 hours he was missing, and Panzerarmee Afrika's command and control was disrupted at a key moment.[61] Von Thoma took over temporary command, but alerted the OKH that Stumme was missing.

If Stumme had reached the front line held by the 164. leichte Division, he might have observed that Fisher's 2nd Armoured Brigade was stuck in the middle of the mine barrier. The tanks of the 9th Queen's Royal Lancers and Queen's Bays were still 3,000 yards from their objective and completely exposed. At 0645 hours, German heavy artillery from the III./AR 33 began shelling the stalled columns and soon vehicles were burning. Fisher's tanks also came under long-range fire which they attributed to 8.8cm guns, but which were probably some of the Marder III tank destroyers from Pz.jg.-Abt. 33. As tanks and infantry carriers tried to spread out to avoid fire, they quickly ran



A British technician examines damage inflicted on a Sherman tank recovered from the battlefield at El Alamein. One large-calibre round has ruptured the gun barrel and another penetration is just next to the coax machinegun. Replacing a main gun barrel could only be accomplished by depot-level maintenance in Cairo. (IWM, E18707) into mines. Every so often, a truck loaded with fuel or ammunition would be hit and explode in a fireball, adding to the general chaos. Sappers did not complete clearing the lanes until noon, which made for a very long day for an armoured brigade sitting under artillery fire. If the Luftwaffe had been able to mount Stuka sorties – which RAF air superiority prevented – there is little doubt that Fisher's brigade would have been demolished. Tanks that hit Teller mines typically had a track blown off and damage to one or more road wheels. In the worst cases, the roadwheel arm might be damaged or the bottom hull penetrated, with significant blast damage inflicted on the interior. Oddly, none of the existing histories of El Alamein appear to note that even though the British armour was expecting to encounter mines, none of the X Corps tanks appear (at least in existing photographs) to be carrying spare track blocks or tow cables. Without spare track blocks, it would be difficult for crewmen to repair even a single damaged track block, and British tankers were not trained how to 'short track' a tank in case of mine damage. Without steel tow cables, it would be difficult to recover mine-damaged tanks. Instead, the accepted practice seems to have been to wait for the B-echelon or RAOC technicans to show up and deal with the situation, although the ever-present minefields complicated that approach. The failure to provide X Corps armoured units with the ability to repair or recover from mine damage on their own, under fire, proved to be a serious omission in pre-battle planning.

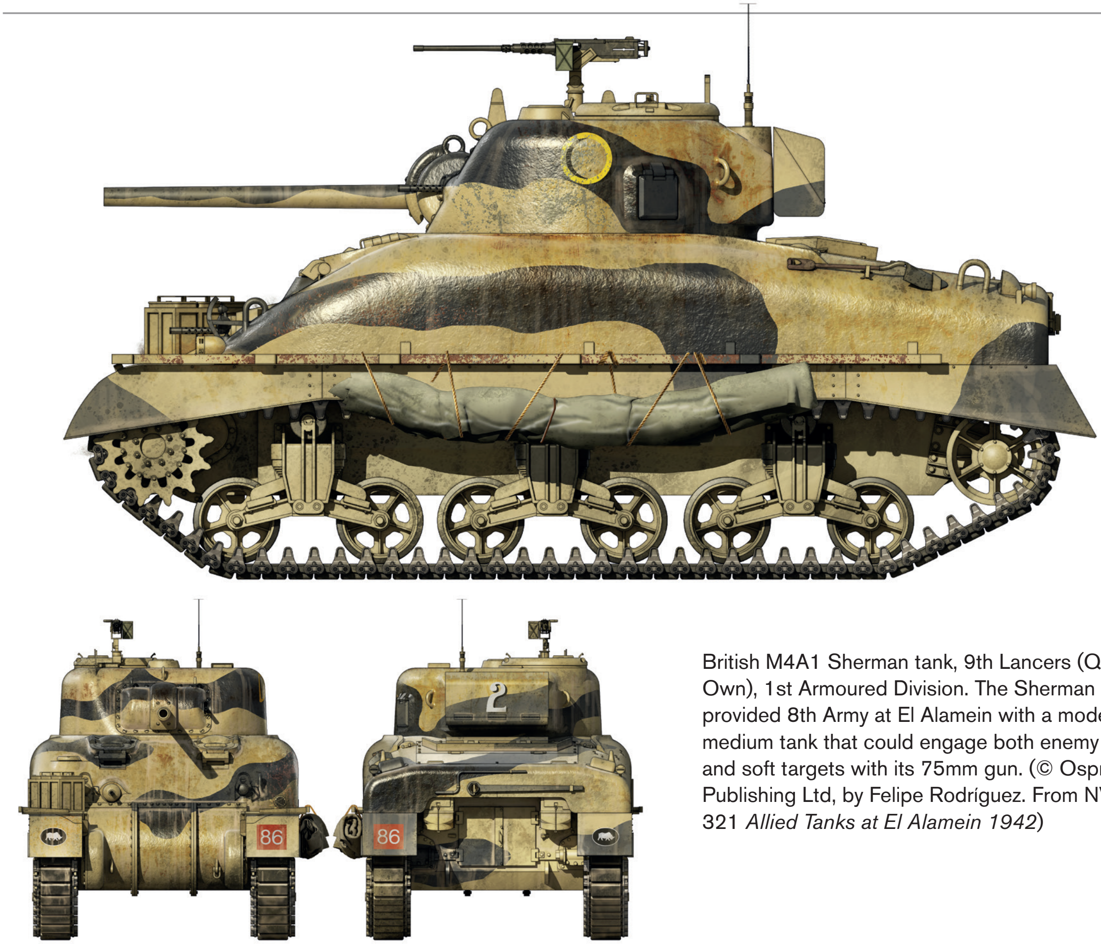
By 0700 hours, it was clear to Lumsden that neither armoured division had made it through the minefields in any strength. Indeed, the trail elements, including Brigadier Kenchington's 24th Armoured Brigade and most of the artillery, were still east of the start line. Leese's XIII Corps had made a significant dent in the Axis front line, but the elimination of one German and three Italian infantry battalions was hardly decisive. Panzerarmee Afrika's mobile reserves had not even been scratched. Despite Stumme's death, local Axis commanders had quickly moved to block the British armour before it could escape from the confines of the minefields. Montgomery's plan of rapidly deploying his armour after crossing the mine barriers and advancing on to line 'Pierson' had proved overly complex and ruined by the various frictions of war. Consequently, Lumsden's X Corps was obliged to spend much of the day under fire, completing the mine clearance work and slowly moving its elements forward. While shocked by the scale of the Allied offensive, the Axis leadership quickly recovered their senses and moved to restore their front line.

In the south, the attack by Horrocks' XIII Corps achieved very little. The British sappers had considerable difficulty getting through the old 'January' mine barrier (which the Axis had incorporated into their own obstacle plan) and the few Scorpion flail tanks involved quickly broke down. Furthermore, the Italian paratroopers of the 'Folgore' division put up a spirited resistance. When the 5 RTR tried to move through one gap in the mines, they lost at least one tank to an Italian 47mm anti-tank gun (in the dark, at close range, this weapon could be quite effective). Unlike the main attack by XXX Corps, the XIII Corps only committed two infantry battalions from the 44th Infantry

Division to pave the way for Harding's 7th Armoured Division. Eventually, Roberts' 22nd Armoured Brigade was able to bull its way through small gaps in the 'January' field but still found itself on the wrong side of the 'February' field when the sun came up. The 21. Panzer-Division, in tactical reserve, did not need to commit its Panzers to stop Harding's division, but simply began shelling the stalled British armour at 0510 hours with its long-range artillery – which continued all day. Major Paddy Doyle, commander of C Squadron in 5 RTR, was badly wounded by enemy artillery while in the turret of his Grant.[62] The 1 RTR and 4 CLY also suffered significant casualties in the effort to break through the mine barriers, which did not succeed until late in the day. Even if Harding's armour had somehow made it through the 'February' minefield on schedule, the 200 tanks of 7th Armoured Division (only 71 of which were Grants) could not single-handedly defeat the 220 tanks of the 21. Panzer-Division and 'Ariete' division. The resources committed by 8th Army to mount the XIII Corps attack proved insufficient to achieve its tactical objectives but more than was necessary for a diversionary operation.

Meanwhile, Lumsden's X Corps gradually pushed its way through the mine barriers, and by noon the 1st Armoured Division was able to begin advancing. Coordination between the armoured divisions and the infantry divisions they were moving through was poor. Mine-clearing efforts became less organized as losses and fatigue increased. The lead troop leader of C Squadron, 9th Lancers, Lieutenant Henry O. D. Thwaites, only negotiated the last stretch of uncleared mines by the simple expedient of walking ahead of his tanks on foot. In this case, fortune favoured the brave and Thwaites did not step on any mines. By the time that C Squadron cleared the mines, German Pz IV Ausf G tanks from Siemens' II./Pz.Regt. 8 were engaging the unit at long range and managed to hit three of them. The Queen's Bays also wandered into the action, losing four more tanks, but claiming ten enemy tanks. German sources claim only two of their tanks were lost, but quite a few were damaged. The German Panzer crews noted that the Sherman tank was a major improvement in 8th Army's armoured capabilities. However, the relative inexperience of many of the Sherman crews and the poor tactical situation in which they engaged German tanks reduced the impact of this weapon. Over the course of the day, the Queen's Bays lost 17 of their 29 Shermans. The M7 Priest self-propelled howitzers also saw action for the first time and provided critical fire support against the Axis counterattacks.[63] By mid-afternoon, the 2nd Armoured Brigade claimed that it had reached Point 33 north-west of Kidney Ridge, but it was mistaken.

On Miteirya Ridge, A and C Squadrons of the RWY were gradually put out of action by persistent fire from enemy anti-tank guns and Hauptmann Siemens' II./Pz.Abt. 8. By the time that Brigadier Currie finally ordered the survivors of the RWY to pull back at 1800 hours, the two squadrons were down to just four tanks (one Sherman, three Grants). Altogether, the RWY lost 20 medium tanks during the day, as well as 42 crewmen killed or wounded. Freyberg wanted the armour to continue advancing forward from Miteirya



British M4A1 Sherman tank, 9th Lancers (Queen's Own), 1st Armoured Division. The Sherman provided 8th Army at El Alamein with a modern medium tank that could engage both enemy tanks and soft targets with its 75mm gun. (© Osprey Publishing Ltd, by Felipe Rodríguez. From NVG 321 *Allied Tanks at El Alamein 1942*)

Ridge, not understanding the disordered nature of the two armoured divisions or the fact that their organic artillery regiments were still moving forward. Lumsden and Gatehouse issued their own orders to armoured units, based upon insufficient situational awareness, as did Leese, who arrived at Freyberg's tactical command post around 1045 hours. As a result, instead of working toward the planned objective of coordinated action, the armoured brigades ended up responding to the orders of local commanders.

The rest of the day consisted of the British trying to untangle their armoured units and to shift as much strength forward to the Oxalic line as possible. Bypassed enemy strongpoints were eliminated and artillery was brought forward. The Germans spent their main effort launching limited counterattacks against the most dangerous threat – the New Zealand positions on the western end of Miteirya Ridge. Hauptmann Siemens' Kampfgruppe claimed to have knocked out 45 British tanks during the course of the day, but itself lost 21 of its 28 tanks. For his part, Montgomery was distinctly unhappy with the way that the opening attacks had gone, particularly with the armour. Ignoring the flawed assumptions in the plan, Montgomery blamed Lumsden for the failure of the X Corps to achieve a breakout in one night. Later, in his memoirs, he wrote that:

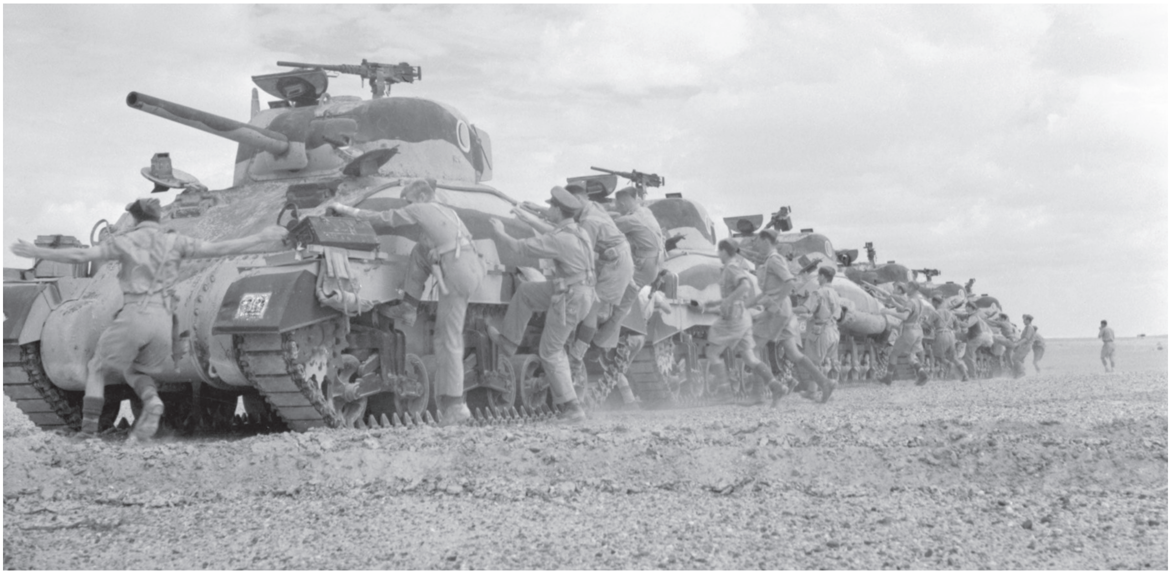
> In accordance with my orders, I expected the armoured divisions to fight their way out into the open. But there was some reluctance to do so and I gained the impression during the morning that they were pursuing a policy of inactivity. There was not that eagerness on the part of senior commanders to push on and there was a fear of tank casualties… The 10th Corps commander [Lumsden] was not displaying the drive and determination so necessary when things begin to go wrong and there was a general lack of offensive eagerness in the armoured divisions of the corps. It was clear to me that I must take instant action to galvanize the armoured divisions into instant action; determined leadership was lacking. I therefore sent for Lumsden and told him he must 'drive' his divisional commanders, and if there was any more hanging back I would remove them from their commands and put in more energetic personalities.[64]

Claiming that the anticipated breakthrough did not occur due to 'reluctance' demonstrates Montgomery at his worst as a commander and was a mistake he would repeat twice in 1944 (operations *Goodwood* and *Market Garden*) when subordinates raised objections to his plans. While Lumsden was certainly not a dynamic armour leader, he was experienced enough to recognize the foolhardiness of trying to ram tanks through uncleared minefields or charge into alert anti-tank gun positions. As Niall Barr noted in his *Pendulum of War*, there was a fundamental misunderstanding in 8th Army between the infantry mindset that thought any objective could be seized with sufficient willpower, whereas the armour commanders regarded battle as a technical contest between firepower and armoured plate.[65] It was Montgomery's idea to cram a mass of armour into a small, heavily mined area with limited options for manoeuvre. It was also his idea to commit all his armour up front, leaving no operational reserves. If Montgomery had taken Gatehouse's recommendation, X Corps would not have been committed until the mine barriers had been thoroughly cleared and XXX Corps had torn gaps in the enemy HKL. Threatening to relieve Lumsden, Briggs and Gatehouse on the first day of the offensive was also clearly a poor way to build team spirit among senior cadre; furthermore, this approach to leadership tends to make subordinates either more reckless in order to meet expectations or risk-averse in order to avoid mistakes. Rommel had a similar approach to dealing with argumentative subordinates that did not advance quickly enough to suit him, but the difference was that he would personally go to the sector to see for himself what was going on. Montgomery bade his subordinates come to him.

In Germany, Rommel learned about the beginning of the British counteroffensive at El Alamein on the afternoon of 24 October and Hitler personally called to ask him to resume command of Panzerarmee Afrika.

Rommel set off at once and would reach Egypt by the evening of 25 October.[66] In the interim, von Thoma played it safe, trying not commit his Panzers too early because of the limited amount of fuel on hand. The appearance of the Sherman tank was also a concern, since von Thoma had no idea how many of these new weapons the 8th Army might possess. Clearly the Sherman rendered the older Pz III Ausf H models obsolete and were superior to the Pz III Ausf L, which left Panzerarmee Afrika with just 30 Pz IV Ausf G that were equivalent. Instead, von Thoma preferred to rely on his superiority in heavy artillery and anti-tank guns to pound the stalled British units as they tried to assemble their forces along Oxalic for a breakout. It was a reasonable, economy-of-force approach for the circumstances of this battle.

On the night of 24/25 October, the XXX Corps infantry mounted a few battalion-level attacks to improve their front-line positions. Leese and Freyberg expected the entire armour of X Corps to assist these attacks and were nonplussed when Lumsden was reluctant to commit the 10th Armoured Division to a night attack. Instead, Leese used the attached Valentine-equipped squadrons from 23rd Armoured Brigade (which lost more tanks in the dark on mines), while Freyberg ordered his divisional cavalry regiment (which had 29 Stuart tanks and 23 universal carriers) and the two remaining regiments of the 9th Armoured Brigade (the decimated RWY had been withdrawn to the rear) to support his infantry. Freyberg also prevailed upon Brigadier Custance to advance with his 8th Armoured Brigade. Surprisingly, the night advance went fairly well and the New Zealand infantry and tanks managed to round up some more prisoners and push out about 2,000 metres from their positions on Miteirya Ridge. Eventually, Gatehouse sent Brigadier Kenchington's 24th Armoured Brigade up to the ridge as well and deployed it forward of the New Zealand infantry. By dawn on 25 October, Gatehouse had all six of his



The Queen's Bays, 1st Armoured Division at El Alamein, on the first day of Operation *Lightfoot*, 24 October 1942. Mounting the tank over the side in this manner is actually the most difficult method, and it is far easier to mount over the front slope or using the final drive in the rear. Also, note that none of the tanks have tow cables mounted, which would make battlefield recovery more time-consuming. (IWM, E18376)

Sherman tanks of 8th Armoured Brigade huddle in leaguer behind the Miteirya Ridge. Due to intense enemy resistance in this sector, British armour could not advance any further without suffering crippling losses. (IWM, E18531)

armoured regiments deployed on line across the front on Miteirya Ridge, with two more regiments of the 9th Armoured Brigade on his left flank. Two of Kenchington's regiments claimed to have reached the 'Pierson' line.[67] However, when the Staffordshire Yeomanry continued to advance, it quickly lost six Crusaders to anti-tank fire. Nearby, the 3rd Hussars lost three tanks and the New Zealand divisional cavalry lost five Stuarts. Unwilling to leave his tanks sitting in the open under anti-tank fire, Gatehouse ordered the 8th Armoured Brigade to pull back behind the infantry in order to reduce casualties. Seeing this withdrawal, Freyberg was incensed that the armour was not out in front of his infantry and complained to Montgomery that the 10th Armoured Division was inactive and that Gatehouse was trying to lead his division from the rear. Both claims were untrue, but Montgomery accepted them at face value.

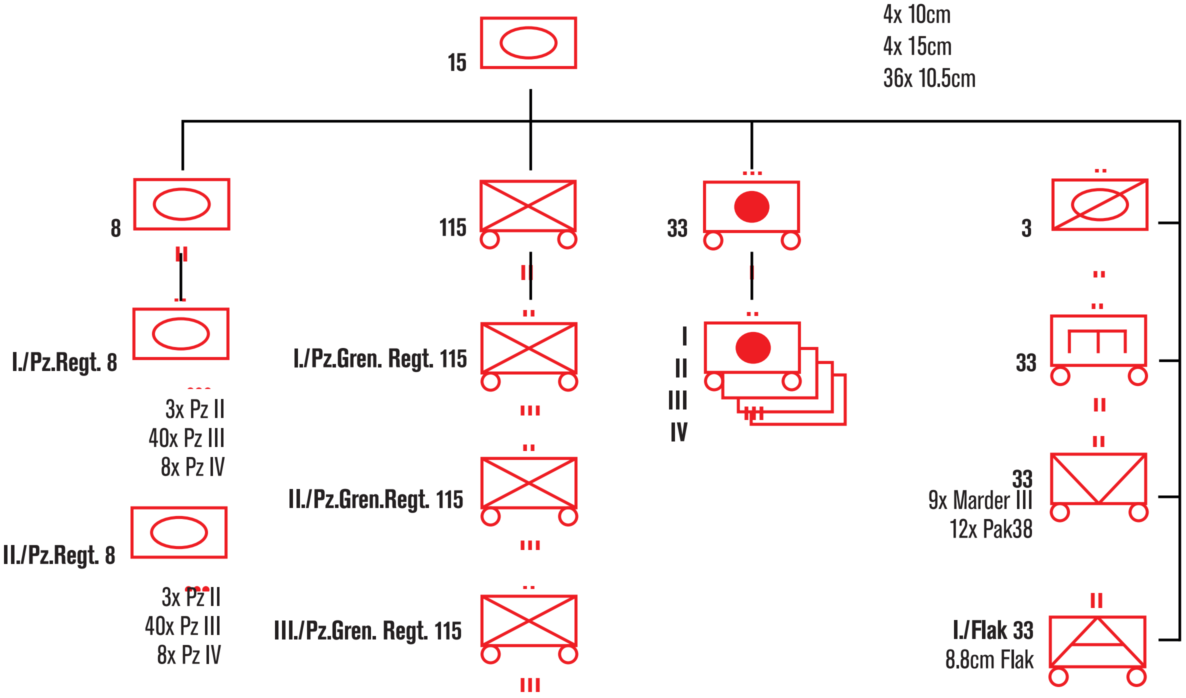
Around 1200 hours, Montgomery held a conference with Leese, Lumsden, Gatehouse and Freyberg, which focused on the alleged inactivity of the X Corps armour and the next steps forward. The meeting was acrimonious and squarely pitted the infantrymen against the tankers. Nevertheless, Montgomery reluctantly agreed that a mass armoured breakout attack from Miteirya Ridge was not immediately feasible and decided to shift his focus to 'crumbling attacks', using infantry and small amounts of armour to wear down the Axis front. Montgomery now decided to use the Australian 9th Infantry Division to push north and the 51st Highland Division to chew its way toward Kidney Ridge. Fisher's 2nd Armoured Brigade, which had already begun probing forward in this sector on the morning of 25 October, was tasked with supporting the two infantry divisions. Both the 9th Lancers and the Queen's Bays had advanced, but quickly ran into a battery of 8.8cm Flak guns and lost seven tanks. The rest of the morning was spent in sporadic long-range duels with a few AFVs from the 15. Panzer-Division's Mitte Kampfgruppe. A Marder III managed to knock out one Crusader in the 9th Lancers with a long-range shot, but that unit claimed that one of its Shermans knocked out a Pz IV with a lucky shot at the incredible range of 4,000 yards (3,657 metres).[68] Claims of this sort are highly suspect because the standard gunnery sights of that era made anything beyond 2,000 metres a waste of ammunition. Even with modern tank gunnery sights and a laser rangefinder, hits beyond 2,500 metres are difficult.

Meanwhile, von Thoma continued to order further local counterattacks against the Australian and New Zealand divisions. Around 1400 hours, Tenente Colonnello Rocco Casamassima's IV Btgl. Carri M. from the 'Littorio' division (with a platoon of five German tanks) tried to attack two Australian infantry battalions but were repulsed by defensive fire from anti-tank guns. Casamassima was wounded and 17 of his tanks were knocked out.[69] The 'Littorio' division had effectively lost one of its three tank battalions, and committing M14/41 tanks up against 6-pounder anti-tank guns was near suicidal. It was even worse if any Shermans appeared on the scene. The effect of high-velocity 57mm and 75mm armour-piercing rounds on the thin armour plate of the M14/41 tanks was devastating, leading to much higher casualties among Italian Carristi. While the Semovente self-propelled guns of Capitano Sciortino's artillery group were excellent at shoot-and-scoot missions, their firepower was inadequate to stop British armour. At long last, the Regio Esercito had finally deployed a large armoured formation in North Africa, but low on fuel and equipped with obsolete equipment, it had little chance on the battlefield of late 1942.

During the afternoon of 25 October, the 15. Panzer-Division also launched several counterattacks against the Allied forces on Miteirya Ridge, but suffered significant losses of tanks due to anti-tank, tank and artillery fire. The 75mm guns on the Shermans and Grants were increasingly placing the bulk of the German armour – the Pz III – at a disadvantage and the small number of

15. PANZER-DIVISION, OCTOBER 1942

Tanks: 108
12x Pz II
80x Pz III
16x Pz IV
Armoured Cars: 29
Anti-tank: 63
Artillery: 44
4x 10cm
4x 15cm
36x 10.5cm


15
8
115
33
3
II
III
I./Pz.Regt. 8
3x Pz II
40x Pz III
8x Pz IV
I./Pz.Gren. Regt. 115
I
II
III
IV
33
II./Pz.Gren.Regt. 115
33
9x Marder III
12x Pak38
II./Pz.Regt. 8
3x Pz II
40x Pz III
8x Pz IV
III./Pz.Gren. Regt. 115
I./Flak 33
8.8cm Flak

Brigadier Raymond Briggs (2nd Armoured Brigade) and Major General Herbert Lumsden (1st Armoured Division). Briggs and Lumsden were cautious with their armour, but made few serious mistakes. In large part, their recommendations on armoured warfare were ignored by Montgomery. (Battlefield Historian, BHC 01389)

Pz IV Ausf G tanks could not alter this imbalance in firepower. By nightfall, the 15. Panzer-Division was reduced to just 39 operational tanks (of which just 16 were Pz III Ausf J/L and six Pz IV Ausf G): 34 in Gruppe Stiefelmayer (I./Pz.Regt. 8) and just five in Gruppe Siemens (II./Pz.Regt. 8), plus a few Marder III tank destroyers. The 'Littorio' division was in somewhat better shape, with 60 medium tanks still operational, but its M14/41 tanks could not stop Shermans. British armour losses were also quite heavy after just 48 hours of combat – a total of 265 tanks out of action or destroyed, including more than one-quarter of X Corps' armour (of which 122 were Grants or Shermans). The 23rd Armoured Brigade had also suffered heavy losses in the minefields, totaling 59 Valentines. Most of these tanks were repairable once recovered, although that could take time on a chaotic battlefield such as this one.[70] The RAOC teams could typically repair about 40–50 tanks per day, but it would take nearly a week to make good these losses. Nevertheless, the high loss figures indicate that the concern by Lumsden and Gatehouse to avoid excessive casualties was not unfounded. They recognized that the 8th Army could not afford to sacrifice its armour too early in the battle, or there would not be enough left to mount a decisive breakout attack.

It is also noteworthy that XIII Corps continued to attack with Harding's 7th Armoured Division, even though this failed to capture any useful objectives. After two days of combat, Harding had lost 62 tanks – nearly 30 per cent of his armour – in a supposed diversionary operation. It is also interesting that most of these tanks were knocked out by the Italian 'Folgore' division's anti-tank gunners. When well trained and well led, Italian troops proved capable of conducting an efficient anti-armour defence even with inferior weapons. Given that the 8th Army had no appreciable armour reserve, grinding down Harding's division in poorly supported secondary attacks was counterproductive for the overall objective. British historians tend to claim that the XIII Corps attacks succeeded in pinning down the 21. Panzer-Division and 'Ariete' division in the south, but this is not correct. Rather, it was the fuel shortage that pinned down these two divisions; if von Thoma had possessed adequate fuel, he would have used at least some of their elements to reinforce his counterattacks against the XXX Corps. Fuel was the critical factor – if the two divisions were moved north to confront the X and XXX Corps advance, there would not be enough left to move them back to the south if necessary.

Although the Desert Air Force was active all day over the battlefield, the Luftwaffe managed to sneak one Stuka strike on the ridge just as dusk was falling, which inflicted considerable damage to the Allied forces on Miteirya Ridge. Rommel arrived at Panzerarmee Afrika headquarters late in the evening, tired after a long, arduous trip to the front.[1] Rommel resumed command of the Panzerarmee at 2130 hours but was not pleased with von Thoma's restrained approach to date. Rommel was particularly incensed that Panzerarmee Afrika only had two V.S. of fuel on hand (with one more V.S. in Benghazi). Yet he made no immediate changes to Panzerarmee Afrika's dispositions on the night of 25/26 October.

While Rommel was considering his response to *Lightfoot*, Leese's XXX Corps was continuing to conduct aggressive night attacks to gain additional ground and to stress the Axis defence. The Australian 26th Brigade was tasked with mounting a night attack toward a small but important hillock known as Point 29 (Hill 28 to the Germans), an enemy artillery observation post located north of Kidney Ridge. The hill was held by elements of the II./Panzergrenadier-Regiment 125 from the 164. leichte Division. While preparing for the attack, the Australians got a lucky break that occurs every so often in war: a patrol captured the German regimental and battalion commander, who were conducting a leaders' reconnaissance in the area. The German battalion commander was carrying a map that showed where the mines were located in this sector, including a clear corridor through to Point 29. Quickly accepting this intelligence windfall for what it was, the Australians modified their plan.[71] At midnight, the Australians mounted a one-battalion (2/48) attack with the two lead platoons mounted in universal carriers, moving under cover of a massive artillery barrage (over 15,000 rounds fired from eight artillery regiments), which suppressed the defenders on Point 29. Armed with knowledge of the cleared path to their objective, the Australian carriers were able to rapidly advance over 1 kilometre in 9 minutes and seize Point 29 by a surprise assault. Before the enemy could react, the Australians brought up anti-tank guns and a squadron of Valentine tanks from the 40 RTR to consolidate their defence. Although seemingly a minor action, the capture of Point 29 would prove to be one of the biggest successes of Montgomery's 'crumbling attacks'.

By the morning of 26 October, Rommel was aware that the Australians had captured Point 29 and he personally went forward to observe the position. Having seen a small portion of the battlefield for a short period of time, Rommel now decided that this was the decisive spot and began to organize a major counterattack. He also decided to commit the 90. leichte Division to reinforce the battered 15. Panzer-Division. However, incessant Allied air attacks and artillery bombardments hindered efforts to assemble his reserves – the Afrika Korps was not accustomed to this level of enemy battlefield interdiction. A nasty afternoon sandstorm also intervened, preventing Rommel from organizing his counterattack that day. Even worse, Rommel learned that an Italian tanker, inbound to Tobruk with a vital load of fuel, had been sunk by RAF bombers, making his fuel situation even more precarious. On the

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[1] On that day, Panzerarmee Afrika was renamed the 'Deutsch-Italienische Panzerarmee', a term which was rarely used. The Italians used the acronym ACIT (Armata Corazzata Italo-Tedesca) to refer to this formation.

Allied side, both the 8th and 9th Armoured Brigades were pulled back from Miteirya Ridge to refit, while the intact 24th Armoured Brigade was shifted northwards to work with Briggs' 1st Armoured Division in the Australian sector (essentially removing it from Gatehouse's command). With Point 29 in Allied hands, Leese wanted to use the two armoured brigades to support an advance to the west, to capture Kidney Ridge and widen the breach in the enemy HKL. As a preliminary step, two motor battalions from Bosville's 7th Motor Brigade would attack at 2300 hours on 26 October, advancing about 3 kilometres, to occupy two obscure positions designated as 'Woodcock' and 'Snipe' – the first north of Kidney Ridge and the second south of it. After the two motor battalions each established a strong defensive position, which would serve as 'pivot points', the two British armoured brigades would advance to link up with them at dawn on 27 October.

Supported by all the available artillery from X and XXX Corps, the two British battalions advanced, but had different outcomes. The 2 KRRC became misoriented and never actually made it to 'Woodcock', but Lieutenant Colonel Victor Turner's 2nd Battalion, The Rifle Brigade (2 RB) occupied the depression designated as 'Snipe' just after midnight. Turner had about 300 troops, 22 tracked universal carriers, 19 6-pounder guns and two 3-inch mortars. The British 1942 Motor Battalion was deficient in infantry – Turner had just 76 riflemen – but he had been provided an extra anti-tank battery, which gave his small unit a great deal of firepower.[72] As for 'Snipe', it was an unremarkable oval depression, about 350 metres by 800 metres, which offered poor visibility outward – although it also proved difficult for the enemy to spot units in the depression. During the night, a Pz IV Ausf F2 tank and a Marder III moving west blundered into the position and were destroyed at point-blank range by 6-pounder fire. Around 0645 hours on 27 October, two enemy armoured columns (Casamassima's IV Btgl. Carri M. and Siemens' II./Pz.Regt. 8) from Mitte Kampfgruppe were sighted moving north of 'Snipe', and the 6-pounders engaged them when they closed to within a range of about 700–800 metres. Along with the German Panzers, the Italian Carristi pressed their attacks, but the 6-pounder armour-piercing rounds shattered the thin frontal armour on their thin-skinned M14/41 tanks. Eventually, the Axis tanks withdrew after three German tanks from Hauptmann Siemens' II./Pz. Regt. 8 were knocked out (Siemens was wounded), as well as nine Italian tanks.[73] The Axis now knew for certain that they had a strong enemy anti-tank gun nest in their midst and began calling in artillery fire on the 'Snipe' position. After Siemens' battalion was rendered *hors de combat*, Hauptmann Otto Stiefelmayer's I./Pz.Regt. 8 and one company of self-propelled Panzerjäger were brought up to deal with 'Snipe', as well as some Bersaglieri infantry.

The two British armoured brigades began moving forward at first light, but the northern pincer, with Fisher's 2nd Armoured Brigade, proved abortive and did not even reach the 2 KRRC. Brigadier Kenchington's 24th Armoured Brigade was more resolute and Lieutenant Colonel George Parkes' 47 RTR reached Snipe at 0830 hours. Soon afterward, Lieutenant Colonel J. B.

Whitehead's 41 RTR also reached the vicinity of Turner's 2 RB. However, the arrival of the British tanks helped the German and Italian gunners to better identify the Snipe position and pour fire onto it. Parkes' 47 RTR was shot to pieces in 30 minutes by Stiefelmayer's Panzers, with Parkes killed and 35 of his tanks knocked out (26 Sherman and nine Crusaders). Whitehead's 41 RTR was also roughly handled, losing 12 tanks, before it pulled back. The British plan to advance with 1st Armoured Division had quickly come unglued. Turner's 2 RB was left to fend for itself in the 'Snipe' position, unable even to call for artillery support due to the loss of radio communications.

Fighting continued around 'Snipe' for the rest of the day, with both sides suffering significant losses. During the afternoon, Major Norris King led a troop of three Churchill tanks forward to join the action, but this did not go well. When one Churchill fired its first 6-pounder round the gun went out of battery, so Major King sent it to the rear. The second Churchill, commanded by Second Lieutenant Allan Appleby, nosed too far forward and was hit repeatedly by enemy fire (38 hits registered on the wreck), including three penetrations. Despite the Churchill's thick armour, one 7.5cm round penetrated the turret front at an angle and one 5cm round entered the side air louvre. The tank burst into flames and Lieutenant Appleby and all but one of his crew were killed. Major King's Churchill tank was hit eight times, without penetration.[74] The combat debut of the Churchill tank was hardly auspicious. The volume of the Axis anti-tank and tank fire is also noteworthy, in that this was a very lethal environment to conduct combat trials of a new tank.

Even before the British occupied 'Snipe', Rommel had made the crucial decision to commit a large portion of his mobile reserves to a major counterattack in the north. At 2100 hours on 26 October, he ordered the 21. Panzer-Division and part of the 'Ariete' division (including the IX Btgl. Carri M. and VI Gruppo Semoventi) to move north to support the depleted 15. Panzer-Division and 'Littorio' division.[75] He also ordered the 90. leichte Division to mount a counterattack against the Australians on Point 29. Rommel coaxed the Luftwaffe into providing some close air support sorties to assist his counterattacks, despite the oppressive RAF air superiority over the battlefield. By mid-day, Rommel decided that he would use the 21. Panzer-Division to crush the British outpost Snipe and push past Kidney Ridge, while 90. leichte Division retook Point 29. While Rommel was trying to mass his reserves, the 'Littorio' division kept up their pressure on 'Snipe', launching an attack with eight M14/41 from the XII Btgl. Carri M. at 1300 hours; all eight Italian tanks were knocked out by 6-pounder fire, but Lieutenant Colonel Turner was badly wounded by artillery fire.[76]

The RAF alerted Briggs to the approach of enemy armour from the south-west and conducted numerous attacks that disrupted the enemy columns. The promised Luftwaffe air support was also disrupted by the RAF, which forced the Stukas to abort their intended strikes. Kenchington deployed his armoured regiments within supporting range of 'Snipe', which lay just off

Major General Alexander Gatehouse, commander 10th Armoured Division, atop his command tank, October 1942. During the Battle of El Alamein, Gatehouse was falsely accused of 'leading from the rear' by Freyberg and Montgomery and threatened with relief. (IWM, E17617)

to the left flank of the 21. Panzer-Division's line of march. Rommel's counterattack began around 1600 hours and it turned into a disaster. Oberst Gerhard Müller's Pz. Regt. 5 had apparently not been informed about the British 6-pounder guns in 'Snipe' and it advanced laterally across the southern side of the outpost, offering flank shots to the British gunners. At the same time, Kenchington's tanks engaged Müller's tanks from the front, which amounted to an L-shaped ambush. Altogether, Pz.Regt. 5 lost about 30 tanks knocked out and another 20 damaged (mostly Pz III) in the short action, although it came close to overrunning 'Snipe' which had nearly exhausted its 6-pounder ammunition. All three medium tank battalions from the 'Littorio' division and one battery of Semovente also participated in the counterattack, but they could not get close to the better-armed British tanks and lost at least 15 M-tanks before withdrawing.[77] Likewise, the 90. leichte Division counterattack against Point 29 was also broken up by heavy defensive fire from Australian artillery and anti-tank fire. By about 1730 hours, Rommel's counteroffensive had fizzled out. Briggs authorized the battered 2 RB (which lost all but one of its 6-pounders) to withdraw from 'Snipe' at 2300 hours and Turner was later awarded the Victoria Cross for his battalion's gallant stand.

The fighting around Outpost 'Snipe' on 27 October has achieved near legendary status and the action was indeed a remarkable moment for the 2 RB, but it was not as lopsided as it might seem. On the positive side (for 8th Army), the defence of 'Snipe' inflicted heavy losses on Rommel's mobile reserves. According to post-battle analysis, conducted one month after the battle, the defenders of 'Snipe' destroyed 37 enemy AFV (21 German tanks, 11 Italian M14/41 and five Semovente/Marder III) and damaged 15–20 more, for a total of 57.[78] In particular, the II./Pz.Regt. 8 had been destroyed and I./Pz.Regt. 8 reduced to just 15 operational tanks. Pz.Regt. 5 had also been badly hurt. After all these losses and consumption of fuel, Rommel had not even destroyed Turner's 2 RB or recaptured any of the lost HKL positions. While the Luftwaffe succeeded in lifting in 70 tons of fuel from Crete, it did little to alter the fact that Panzerarmee Afrika was quickly running out of fuel. In large part, the heavy German tank losses around 'Snipe' were the result of poor situational awareness, even though the position was 1,000 metres behind Axis lines. Axis units kept exposing their flanks to the 6-pounder guns, unaware that they were in an engagement area. The available German and Italian artillery battalions should have been more than adequate to clobber 'Snipe' into submission prior to a ground assault, but 12 hours of continuous bombardment against a position that had virtually no cover inflicted only 20 per cent casualties on Turner's battalion (but did knock out 16 of his 22 carriers). Nor did the Axis units employ smoke in assaulting 'Snipe', which could have significantly reduced their casualties.

Yet the fighting around 'Snipe' proved frustrating and costly for the British as well. Briggs' 1st Armoured Division had been blocked from making any significant advance westwards, the enemy still held Kidney Ridge and now he was opposed by the bulk of the Panzerarmee Afrika's remaining mobile reserves. Few accounts mention that Kenchington's 24th Armoured Brigade was crippled in the fighting around 'Snipe', altogether losing the majority of its brand-new Sherman tanks. As a result of these losses, the brigade was sent to the rear and its remaining tanks dispersed to other units. The three armoured regiments (41, 45 and 47 RTR) were soon disbanded or reduced to holding units, as was the 24th Armoured Brigade. It was also clear from the first few days of *Lightfoot* that the TA armoured regiments were not well prepared for combat against the Afrika Korps and suffered disproportionate losses, resulting in the wastage of crews and tanks. Despite the defensive victory at 'Snipe', British tank-infantry cooperation remained tenuous, as demonstrated when Briggs tried to reoccupy the 'Woodcock' position on the morning of 28 October. Brigadier Alec W. Lee's 133rd Infantry Brigade (from 10th Armoured Division) was brought up and sent forward, with Fisher's 2nd Armoured Brigade in support. However, the three infantry battalions had just reached their objectives when Stiefelmayer mounted a sudden counterattack with a few Pz IIIs and M14/41 tanks at 0730 hours, which quickly overran the inexperienced 4th Battalion Royal Sussex on 'Woodcock' (389 casualties). Unable to set up their anti-tank guns in time, the 4th Royal Sussex put up only token resistance. Amazingly, the 10th Hussars from 2nd Armoured Brigade witnessed the British prisoners being led away, but was unable to intervene.[79]

After 1st Armoured Division's failure to break through, despite the tactical success at 'Snipe', Montgomery recognized that *Lightfoot* had run its course and that no further success was likely in the Kidney Ridge sector. Consequently, he directed the Allied forces in this sector to shift to the defence. Relatively little tank versus tank combat occurred between 28 and 31 October. Instead, the focus was on infantry combat in the north, where the 9th Australian Division (and some Valentines from Finigan's 40 RTR) were gradually demolishing the forward positions of the 164. leichte Afrika-Division along the coast road north-west of Tell el Eisa. Montgomery was intentionally trying to induce Rommel to shift his armour further north to cover the coast road, which partially succeeded. When two battalions from Panzergrenadier-Regiment 125 were isolated by the Australian advance, Rommel promptly sent Kampfgruppe Pfeiffer from the 21. Panzer-Division to the rescue. He directed von Thoma to personally lead the counterattack, which kicked off at noon on 31 October. Kampfgruppe Pfeiffer was able to re-establish contact with the isolated *Panzergrenadier*s, despite the efforts of Finigan's 40 RTR, which had 21 of its Valentines knocked out. In a sector where Montgomery had no tanks armed with 75mm guns deployed, the Afrika Korps Panzers could still be a dominant force. However, by the end of 31 October, Rommel only had 106 German tanks (including 33 Pz III Ausf J/L and nine Pz IV Ausf G) and 198 Italian medium tanks operational; a total of 49 German medium tanks were *Totalausfälle,* including ten Pz IV Ausf G.[80] Numerically, the strongest Axis armoured formation was Arena's 'Ariete' division (126 tanks), which was still in the south and had not been heavily engaged yet. In addition to fuel shortages, even Rommel's ammunition stocks were dangerously low. Given his declining combat strength and abysmal logistic situation, Rommel had already begun considering withdrawal, but he recognized that there was only enough fuel and transport for part of the DAK to escape. He appealed to Rome for more fuel and ammunition, but was provided only with token amounts.

In contrast to Rommel's mood of despair, Montgomery now intended to finish the battle with one more large set-piece attack. He envisioned that the new attack, designated *Supercharge*, would split the Axis front open and lead to a collapse. Montgomery knew from ULTRA that Rommel was facing a supply crisis and Panzerarmee Afrika was approaching a breaking point. However, the 8th Army was no longer able to conduct multi-division offensives due to the shortage of available infantry. Montgomery was forced to take the 151st Infantry Brigade from Horrocks' XIII Corps in the south just to scrape up enough infantry to mount a smaller version of *Lightfoot*. Even the artillery support would be less than *Lightfoot*, since the 8th Army had consumed a good portion of its ammunition stocks in the first week of the battle and now had to economize on the number of rounds it could fire per day. Less infantry meant a smaller penetration could be made in the enemy HKL. While the 8th Army still had about 800 operational tanks, only 285 were mediums (152 Shermans and 133 Grants), which were needed for the anticipated tank battle with Rommel's remaining Panzers. Montgomery decided to bring Harding's 7th Armoured Division up from the south to reinforce the X Corps, which he still intended to use to exploit a breakthough. The 8th Army staff, particularly Brigadier de Guingand and Major Edgar Williams, were able to persuade Montgomery that the best place to mount *Supercharge* was the area north of Kidney Ridge, which they assessed as mostly held by Italian units (which was incorrect).

Operation *Supercharge* would begin in similar fashion to *Lightfoot*, with a large artillery preparation, although on only one-third as wide a sector. Mine-clearing was still a major factor in operational planning, but fewer mines were expected in this sector. Operation *Supercharge*, set to begin on the night of 1/2 November, would consist of three distinct phases, all to be accomplished in rapid succession:

1. An infantry assault, on a narrow sector, to punch a hole in the enemy front line in order to create a penetration corridor for friendly armour.
2. The 9th Armoured Brigade would follow the infantry and advance beyond their forward line to the Rahman Track in order to eliminate the enemy rear gun line.
3. The 1st Armoured Division would advance through the penetration corridor and move up to the Rahman Track to engage and destroy any remaining enemy armoured reserves.

The oddest thing about Operation *Supercharge* – rarely mentioned in most histories – was the command structure. Major General Bernard Freyberg, commander of the 2nd New Zealand Division, was put in charge of leading *Supercharge*, even though his division would initially contribute only a single battalion to one of the supporting attacks. Montgomery assigned two British infantry brigades from two different divisions (151st Infantry Brigade from 50th Infantry Division and 152nd Infantry Brigade from the 51st Highland Division) to Freyberg's command, as well as Currie's 9th Armoured Brigade, two infantry tank regiments (8 RTR, 50 RTR) and the 133rd Infantry Brigade from 10th Armoured Division. In essence, Montgomery made Freyberg a mini-corps commander, with five tank and nine infantry battalions that did not belong to his own division. Lumsden and Gatehouse were virtually frozen out of the planning process for *Supercharge*, even though their units were being taken to lead the attack. In particular, Brigadier Currie objected to the idea of unsupported tanks advancing against enemy guns without infantry support, but Freyberg overruled him. Montgomery virtually disbanded the 10th Armoured, leaving it as little more than a holding formation. Until Briggs' 1st Armoured Division was committed through the penetration corridor, the X Corps would initially only command two armoured car regiments (1st Royal Dragoons and 4/6 SAACR), which Montgomery expected to plunge deep behind enemy lines.[81] Apparently having not learned much from the initial chaos during the opening hours of *Lightfoot*, Montgomery told the senior commanders on the afternoon of 1 November that 'the breakthrough must be made before dawn, [and] it will be the turning point of the campaign'.

Freyberg was a valiant and capable soldier – one of the best senior infantry leaders of the Second World War – but he had already demonstrated a reckless use of attached tanks on Miteirya Ridge and was openly antagonistic to the senior armour officers. Indeed, Freyberg's view of tanks was stuck in a 1918 mindset, that they were an expendable asset designed to keep down infantry casualties, particularly among his New Zealanders. Nevertheless, Montgomery admired Freyberg's hard-charging spirit and had already warned the armour leaders that he would replace them if they did not show his kind of zeal. Now the tankers in 8th Army would have to pay the price for this kind of petulant decision-making.

SUPERCHARGE: NOVEMBER 1942

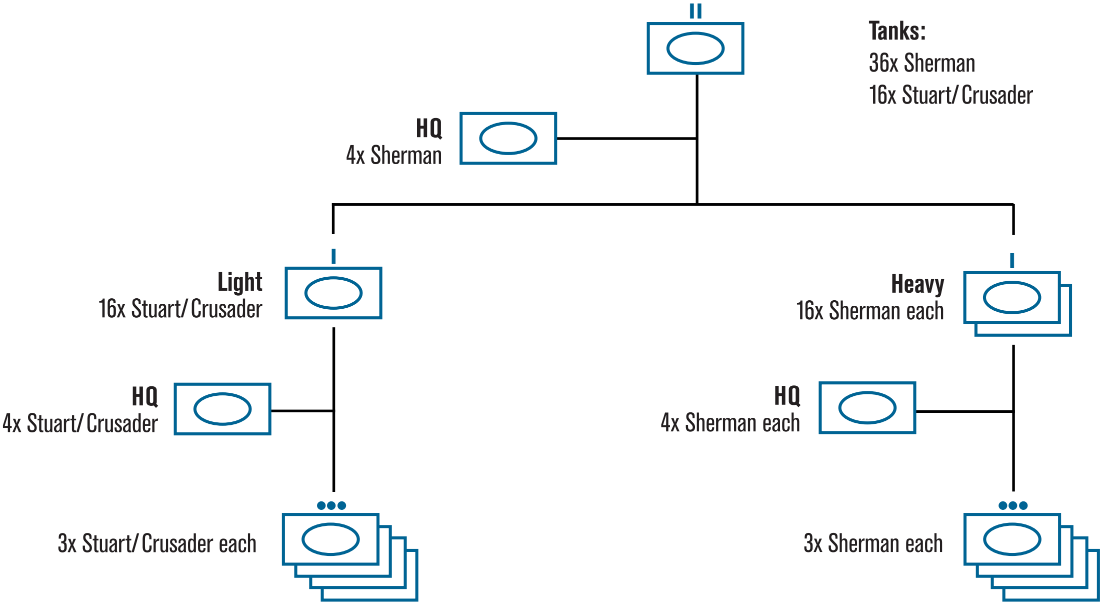
'For hours, the whack of armour-piercing shot on armour plate was unceasing.'

9th Lancers, Tell el Aqqaqir, 2 November 1942[82]

On the evening of 1 November, the RAF began a series of attacks with Wellington bombers to disrupt enemy units in the vicinity of Tell el Aqqaqir (where DAK reserves were assembled) and Sidi Abd el Rahman in the Australian sector. At 0105 hours on 2 November, Operation *Supercharge* began with an artillery preparation from 296 25-pounders and 48 medium guns, which fired a total of 54,000 rounds. Then the artillery shifted to a 'creeping barrage', as used in 1918, to pave the way for four battalions of the 151st and 152nd Infantry Brigades attacking on a 3,700-metre-wide front. Matilda Scorpion tanks were used to clear mines, as well as mine detectors. The 50 RTR followed the 151st Infantry Brigade with 38 Valentines, while 8 RTR followed the 152nd Infantry Brigade with 34 Valentines.[83] The Axis defenders in this sector consisted of one battalion from the 90. leichte Division, one *Panzergrenadier* battalion from 15. Panzer-Division, one Bersaglieri battalion from the 'Littorio' division and the remnants of the XII and LI Btgl. Carri M. (with some tanks dug in). Resistance was heavy in the north, which slowed the advance of the 151st Infantry Brigade and cost 50 RTR 14 of its Valentines, but otherwise the attack achieved its objective of advancing 3,600 metres by 0345 hours. The 8 RTR suffered heavy losses to mines and anti-tank guns, totalling 22 of its Valentines.[84] Thus half the Valentines were disabled even in a relatively quick break-in attack. Infantry losses were relatively light – about 400 troops in the two brigades. The supporting attacks on the right and left flanks by the New Zealand Maori Battalion and the 133rd Infantry Brigade were also successful. By 0400 hours, a large dent had been made in the Axis front and the Allied infantry was digging in along their objective line, positioning anti-tank guns and reporting mission success to Freyberg.

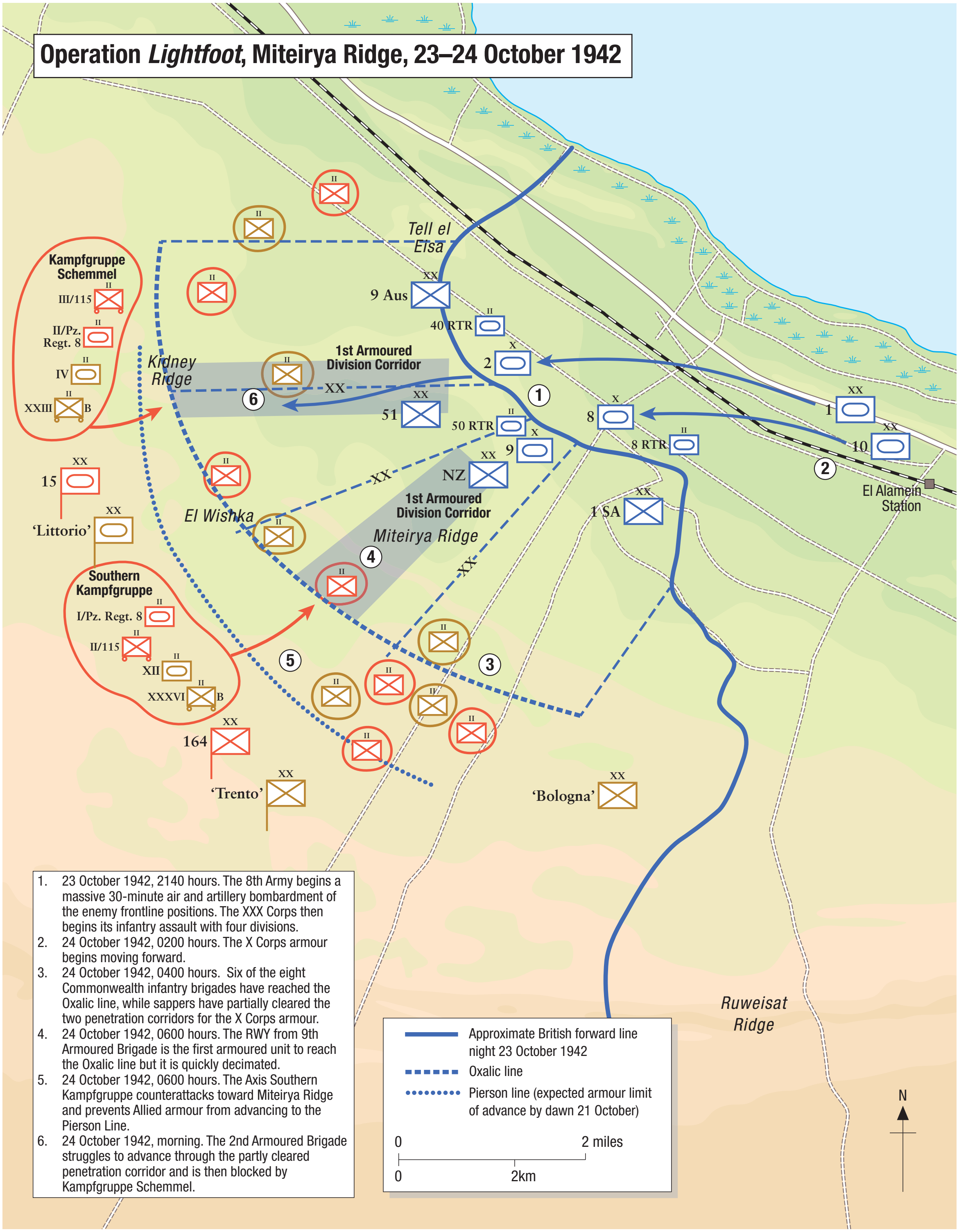
Following close behind the infantry were the two armoured car regiments, which were expected to push on and try to get into the enemy rear areas. Lieutenant Colonel Reeves-Moore's 4/6 SAACR ran into too much resistance, lost several armoured cars and could not get through. However, Lieutenant Colonel Anthony H. Pepys' 1st Royal Dragoons managed to sneak two of its squadrons past the 15. Panzer-Division, and these armoured cars would conduct a successful raid against enemy logistic units. The use of armoured cars in this role was risky, but had the potential to disrupt the enemy's already fragile lines of communication. Meanwhile Currie's 9th Armoured Brigade spent the entire night moving forward from the area of the El Alamein train

BRITISH ARMOURED REGIMENT, NOVEMBER 1942



station to the forward assembly area, then following the cleared tracks of the two infantry brigades. Altogether, the brigade had nearly 600 vehicles, including 108 tanks, when it started the movement, but it lost a number of vehicles from mines and artillery fire along the way. Progress was slower than expected, with columns bunching up along the dust-clogged tracks; once again, visibility was reduced to near zero at times. According to the *Supercharge* plan, the 9th Armoured Brigade was supposed to reach the forward line (designated as Line Grafton) held by friendly infantry before dawn (0545 hours) and then advance an additional 900 metres to the Rahman Track, which was expected to be the enemy rear gun line. The planners expected that the enemy guns would be less effective if attacked before dawn. A small mound located on the left flank of the brigade sector, Tell el Aqqaqir, was also supposed to be captured by the brigade. The brigade's final objective line lay about 2,500 metres west of Grafton. Behind Currie's brigade, Fisher's 2nd Armoured Brigade from the 1st Armoured Division was also moving toward the penetration corridor and would exploit the disruption of the enemy gun line in order to create a breakthrough.

Currie's brigade was slightly behind schedule when the 3H and RWY reached the positions held by friendly infantry at 0548 hours, but still enjoyed some cover from the darkness. However, the Warwickshire Yeomanry was late, which delayed the advance across Grafton until 0615 hours. Once all were in place, the brigade (now down to 94 tanks) advanced with the 3rd Hussars on the right, the RWY in the centre and the Warwickshire Yeomanry on the left. The RWY had



Operation *Lightfoot*, Miteirya Ridge, 23–24 October 1942

1. 23 October 1942, 2140 hours. The 8th Army begins a massive 30-minute air and artillery bombardment of the enemy frontline positions. The XXX Corps then begins its infantry assault with four divisions.
2. 24 October 1942, 0200 hours. The X Corps armour begins moving forward.
3. 24 October 1942, 0400 hours. Six of the eight Commonwealth infantry brigades have reached the Oxalic line, while sappers have partially cleared the two penetration corridors for the X Corps armour.
4. 24 October 1942, 0600 hours. The RWY from 9th Armoured Brigade is the first armoured unit to reach the Oxalic line but it is quickly decimated.
5. 24 October 1942, 0600 hours. The Axis Southern Kampfgruppe counterattacks toward Miteirya Ridge and prevents Allied armour from advancing to the Pierson Line.
6. 24 October 1942, morning. The 2nd Armoured Brigade struggles to advance through the partly cleared penetration corridor and is then blocked by Kampfgruppe Schemmel.

Approximate British forward line night 23 October 1942

Oxalic line

Pierson line (expected armour limit of advance by dawn 21 October)

Tell el Elsa
XX
9 Aus
II
40 RTR
X
2
1st Armoured Division Corridor
XX
51
1
Kidney Ridge
6
II
50 RTR
X
9
X
8
II
8 RTR
XX
1
XX
10
2
El Alamein Station
XX
NZ
1st Armoured Division Corridor
Miteirya Ridge
XX
1 SA
XX
El Wishka
4
3
5
Kampfgruppe Schemmel
III/115
II/Pz. Regt. 8
IV
XXIII
B
XX
15
XX
'Littorio'
Southern Kampfgruppe
I/Pz. Regt. 8
II/115
XII
XXXVI
B
XX
164
XX
'Trento'
XX
'Bologna'
Ruweisat Ridge
0
2 miles
0
2km
N

been hastily re-equipped after their heavy losses on Miteirya Ridge but many of their repaired tanks were operating in 'degraded mode', with inoperative coax machine-guns, intercom systems and radios. Brigadier Currie was in the lead, riding on the outside of his command tank.[85] At 0615 hours, a slow-moving creeping artillery barrage began falling just ahead of the brigade, providing some concealment, but it forced the tanks to crawl forward at just 30 metres per minute (a little more than 1mph). Each regiment had a Royal Artillery Forward Observer (FO) team, mounted in a Stuart tank, to coordinate the artillery fire. Unfortunately, these light tanks were quickly knocked out in action, depriving the brigade of the ability to call in artillery fire on targets of opportunity. The Crusader-equipped squadrons led the advance, with the medium squadrons trying to fan out. At first, the British tanks encountered only enemy infantry:

> The leading tanks move jerkily forward with their noses well up into the barrage, which is playing hell with the enemy's infantry… Enemy infantry are scurrying in all directions and we seem to have overrun at least two of their headquarters in the darkness. It is a gruesome business, this crushing of men by tanks.[86]

Unnoticed, Lieutenant Colonel Guy Jackson's Warwickshire Yeomanry pulled off to the left, away from the main body of the brigade, and was soon separated by a distance of about 2 kilometres. Jackson's regiment was responsible for capturing Tel el Aqqaqir, but in the poor visibility, one mound in the desert looked much like another. All three regiments were navigating strictly by compass bearings, with virtually no distinguishable landmarks to guide them. Lieutenant Colonel Alistair Gibb, now in command of the RWY while Currie was recovering from an injury, scanned the horizon in front with his binoculars, but could see only dust and smoke. Against relatively light resistance, both the 3rd Hussars and the RWY pushed on to their objective – the north-south Rahman Track – which was marked by a line of telephone poles. At that point, the artillery fire lifted and the Crusader tanks from Major Tim Gibbs' B Squadron, RWY pushed on past the track. Unfortunately, as soon as they passed through the curtain of dust and smoke, the Crusaders encountered the enemy gun line. Panzer-Artillerie-Regiment 33 from the 15. Panzer-Division had deployed two of its battalions just west of the Rahman Track, and they had a screen of anti-tank guns (mostly Italian 47/32 and German 5cm Pak, but some 7.62cm ex-Russian guns) deployed in front of them. Three batteries of 8.8cm Flak guns were deployed off on the left near Tell el Aqqaqir, and the Italian 'Littorio' division also had some 8.8cm Flak guns in the area. Many other German and Italian units were also intermixed along the track, which was used for lateral movement.

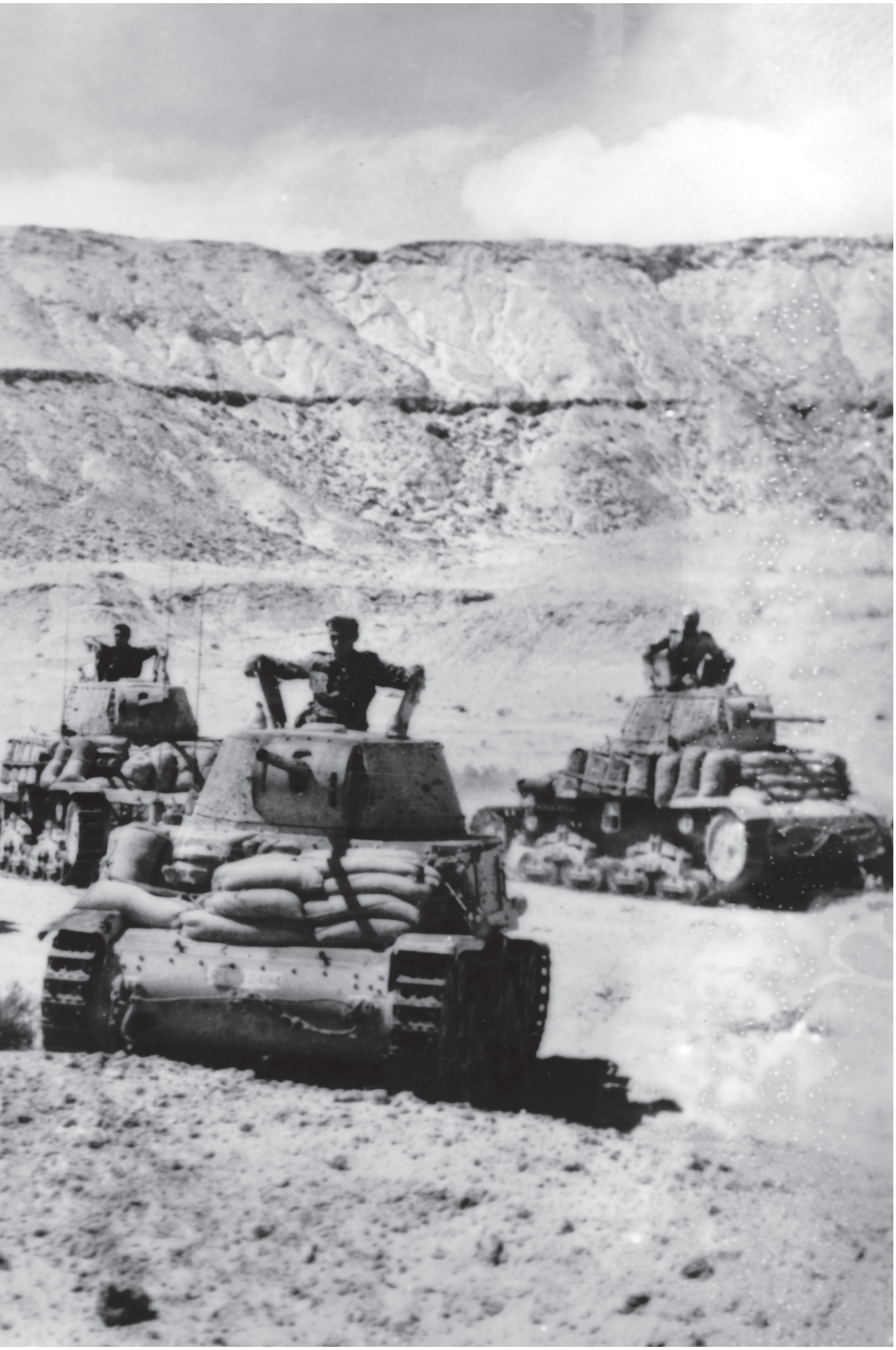
In the dim light, Major Tim Gibbs impulsively ordered his tanks to charge, and they were able to overrun a battery of Italian guns and machine-gun the crew of one howitzer. Yet once the enemy recovered from the shock of contact, they proceeded to shoot B Squadron to pieces in just 2 minutes, with only one of its 12 Crusaders escaping. Now it was getting light, and the enemy could see the British tanks. Further back, Colonel Gibb, in the turret of his Grant tank named 'Trowbridge', spotted enemy tanks (Oberst Teege's Pz.Regt. 8) approaching from the south-west, at a range of about 1,700 metres. He also looked around and saw no sign of the Warwickshire Yeomany on his left or 3rd Hussars on his right – the 9th Armoured Brigade had dispersed across too wide a front and was not within supporting range. Colonel Gibb ordered his two remaining medium squadrons to fire smoke rounds, which provided cover for a few minutes; he hoped this would buy time until the 2nd Armoured Brigade arrived. However, once the smoke cleared, the enemy tanks from Hauptmann Otto Stiefelmayer's I./Pz.Regt. 8 and Capitano Constanzo Preve's XII Btgl. Carri M. came on fast at 0705 hours, supported by the fire from Panzer-Artillerie-Regiment 33. Colonel Gibb's tank was the first one hit and he was wounded. The German tank gunners were clearly veterans, because they quickly destroyed all the Grant tanks in C Squadron, then most of the Shermans in A Squadron.[87] By 0735 hours, the RWY had been destroyed, except for four tanks which escaped. However, Hauptmann Stiefelmayer was also killed in the action and 17 of his tanks knocked out.

Meanwhile, off on the right flank, Lieutenant Colonel Sir Peter Farquhar's 3rd Hussars had not advanced as far as the RWY, but had also encountered the enemy artillery positions. In this case, the entire regiment (which was down to just 23 tanks) seems to have unwittingly entered the enemy engagement area, resulting in a close-range fight. Major Michael Eveleigh's B Squadron managed to overrun two platoons of 5cm anti-tank guns, but Eveleigh's tank was soon shot up in flames by a platoon of Italian 47mm guns at a range of 20 yards, and the rest of his squadron was soon knocked out by 8.8cm Flak guns. Major Alan Dawes' C Squadron drove straight into the 8.8cm fire and his squadron was also obliterated.[88] In just 15 minutes, the 3rd Hussars lost 16 tanks and the last eight tanks were forced to break off the action.[89] Off on the left flank, the Warwickshire Yeomany did not reach the Rahman Track because they had to make a diversion to avoid some uncleared mines, but were engaged from the flank by enemy guns that had not been spotted, including the DLVI Gruppo Semoventi. In a short action, the Warwickshires lost 31 tanks, with just seven escaping eastward.[90] By 0800 hours, a stunned Brigadier Currie realized that his brigade had been demolished and had a total of only 19 tanks left (eight in 3H, four in RWY, seven in Warwicks), all of which were short on fuel and ammunition. Altogether, the 9th Armoured Brigade suffered 229 killed and wounded out of approximately 400 tank crewmen in this short, sharp action. According to post-battle analysis by the 8th Army, 35 destroyed enemy anti-tank guns were found in this area, although there was no way to determine how many Currie's brigade accounted for against those knocked out later in the day by 1st Armoured Division or airstrikes. However, the main point was that the majority of the long-range 8.8cm Flak guns – which were deployed behind the screen of lighter anti-tank guns – were still intact.

The lead elements of Fisher's 2nd Armoured Brigade began to arrive on the battlefield around 0700 hours, just in time to see the 9th Armoured Brigade being destroyed. Barclay's Queen's Bays were deployed on the right, Grosvenor's 9th Lancers in the middle and Archer-Shee's 10th Hussars on the left. The 2nd Armoured Brigade was accompanied by a battery of M7 Priest self-propelled howitzers from the 11 RHA and a motorized infantry battalion. Fisher's tanks were about 500 metres behind Currie's, and visibility was extremely poor due to smoke from burning tanks and dust. Yet as soon as the 2nd Armoured Brigade began to advance, it came under intense anti-tank and artillery fire from the front and both flanks. Archer-Shee's tank was one of the first ones hit. A number of other tanks were knocked out and the brigade halted, trying to pick out targets through the smoke and haze. Grosvenor spotted Brigadier Currie nearby, sitting on the turret of his command tank, alone amidst a group of wrecked tanks, apparently oblivious to the enemy fire. When Grosvenor dismounted his tank to speak with him, Currie was livid and said, 'well, we've made a gap in the enemy anti-tank screen, and your brigade has to pass through, and pass through bloody quick'. Surveying the carnage ahead and intense enemy resistance, Grosvenor replied, 'I have never seen anything, sir, that looks less like a gap.'[91]

By 0720 hours, the 9th Lancers had advanced less than 1,000 metres and had not reached the Rahman Track. The rest of the brigade was further back and Archer-Shee's 10th Hussars were engaged in a long-range duel with the German tanks and 8.8cm Flak guns atop the mound near Tell el Aqqaqir. Soon afterwards, Major General Briggs arrived with his tactical command post in two Crusader tanks; his tanks laid wire so he could have secure voice communications with his main command post further back. Lumsden arrived at the main command post around 0745 hours and was able to speak directly to Briggs, thanks to the wire communications. Neither Lumsden nor Briggs were happy with the lack of forward progress by Fisher's brigade, but their mission was to complete the destruction of Rommel's armour, not capture

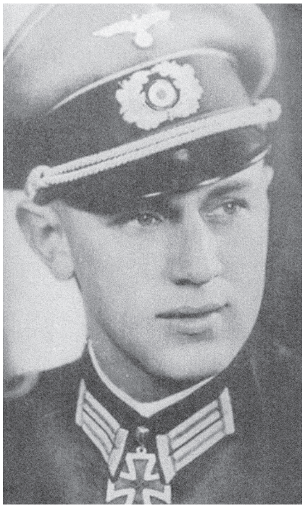
Sherman tanks of C Squadron, 9th Queen's Royal Lancers, 2nd Armoured Brigade, advance toward the Rahman Track during Operation *Supercharge*, 2 November 1942. The Allied armour was stymied by the Axis gun line and could not achieve a breakthrough. (IWM, E18972)



Italian tanks at El Alamein. The M14/41 tank had become a battlefield liability by this point and sandbags were used to enhance frontal protection, but nothing could be done about its inferior firepower. (SDZ, 02898899) specific terrain objectives (of which there were none of tactical value in the area). Yet Fisher's brigade was in contact with 21. Panzer-Division, and radio intercepts indicated that Rommel was preparing to commit his remaining Panzers to prevent a British breakthrough – defeating this reserve was Montgomery's over-riding operational intent. Briggs told Fisher to 'destroy enemy tanks' and then push on as soon as possible. Freyberg, who was not responsible for the 1st Armoured Division, also inserted himself into the decision-making process by complaining to Leese that Briggs' brigade was missing a chance to exploit the 'gap' in the enemy gun line. Even amidst an ongoing tank battle, there was still time for the old infantry versus armour rancour in 8th Army to manifest itself.

Rommel told von Thoma to hit the British armoured division with everything he had – this was a final throw of the dice. Von Thoma assembled about 40 tanks from Kampfgruppe Pfeiffer (II./Pz.Regt. 5), about 50 tanks from Hauptmann Siemens' II./Pz.Regt. 8 and about 35 tanks from the Italian XII and LI Btgl. Carri M. He also requested Harko Afrika to provide all available artillery in support and the Luftwaffe promised some Stuka sorties. The first Axis counterattack started around 0900 hours, with Hauptmann Siemens' and the Italian tanks advancing from the west. Grosvenor's 9th Lancers took the brunt of the attack, losing seven Shermans and one Crusader but claiming 31 kills. It is clear that Capitano Constanzo Preve's XII Btgl. Carri M. was wiped out (Preve was killed) and Siemens' losses were heavy enough to force him to break off the action. German 8.8cm guns kept the British tank brigade under persistent fire all day, but the M7 Priests of the 11 RHA proved their worth in knocking out many of these dreaded weapons. Rommel's trump card – the 8.8cm Flak gun – had finally been outmatched. At 1015 hours, Custance's 8th Armoured Brigade arrived and deployed two of its regiments on Fisher's left flank, but detached the Staffordshire Yeomany to watch a group of enemy tanks (a detachment from 21. Panzer-Division) trying to get behind Fisher's right flank. Thus Briggs now had six armoured regiments in a rough crescent-shaped line, with about 250 tanks (including over 100 Shermans). For the first time in North Africa, the 8th Army had a large force of well-armed tanks, with plentiful air and artillery support, sitting on the tactical defence while Rommel flung his Panzers at them.

Allied air superiority played a major role in thwarting the Axis counterattack at Tell el Aqqaqir. The RAF flew over 300 sorties over the battlefield, including numerous low-level air attacks by Boston (A-20) light bombers, which wreaked havoc upon the German assembly areas and gun positions. When the Luftwaffe tried to mount two Stuka missions to support the counterattack, both were broken up by RAF fighters. At 1500 hours, Oberst Willi Teege gathered up all the remaining tanks of Pz.Regt. 8 – about 35 – and personally led them in another counterattack. By this point, Briggs had brought up the 7th Motor Brigade in support, as well as more artillery. Teege's counterattack was shattered by Allied defensive firepower; his command tank was hit at 1605 hours and he was mortally wounded.[92] Only 17 tanks remained in Pz.Regt. 8 after this futile effort. Amazingly, Briggs' 1st Armoured Division lost just 14 tanks destroyed and another 40 damaged during the day-long battle around Tell el Aqqaqir. In contrast, that evening von Thoma reported to Rommel that the DAK was down to 37 operational tanks (17 in 15. Panzer-Division and 20 in 21. Panzer-Division) and one-third of its 8.8cm Flak guns were left.[93] Altogether, the Germans lost at least 60–70 tanks and the Italians about 20 in the fighting on 2 November. While the Italian 'Ariete' and 'Trieste' divisions still had about 160 tanks left, Rommel knew that the M14/41s would be of little value against Sherman and Grant tanks. Furthermore, the diminished Axis units no longer had extensive mine barriers in front of them to slow enemy armour. Thus, the 8th Army had not achieved a breakthrough – the Axis gun line was battered, but still intact. However, Briggs had 1st Armoured Division with 200 tanks still operational and Harding's 7th Armoured Division would be committed the next day, with another 80 tanks. Without an effective armoured reserve left, Rommel would not be able to stop the next Allied attempt to smash their way through his brittle front.



Hauptmann Otto Stiefelmayer, the 27-year-old commander of I./Panzer-Regiment 8, was killed in action on 2 November 1942. The loss of highly skilled veteran armour leaders was much harder to replace than equipment. (Author's Collection)

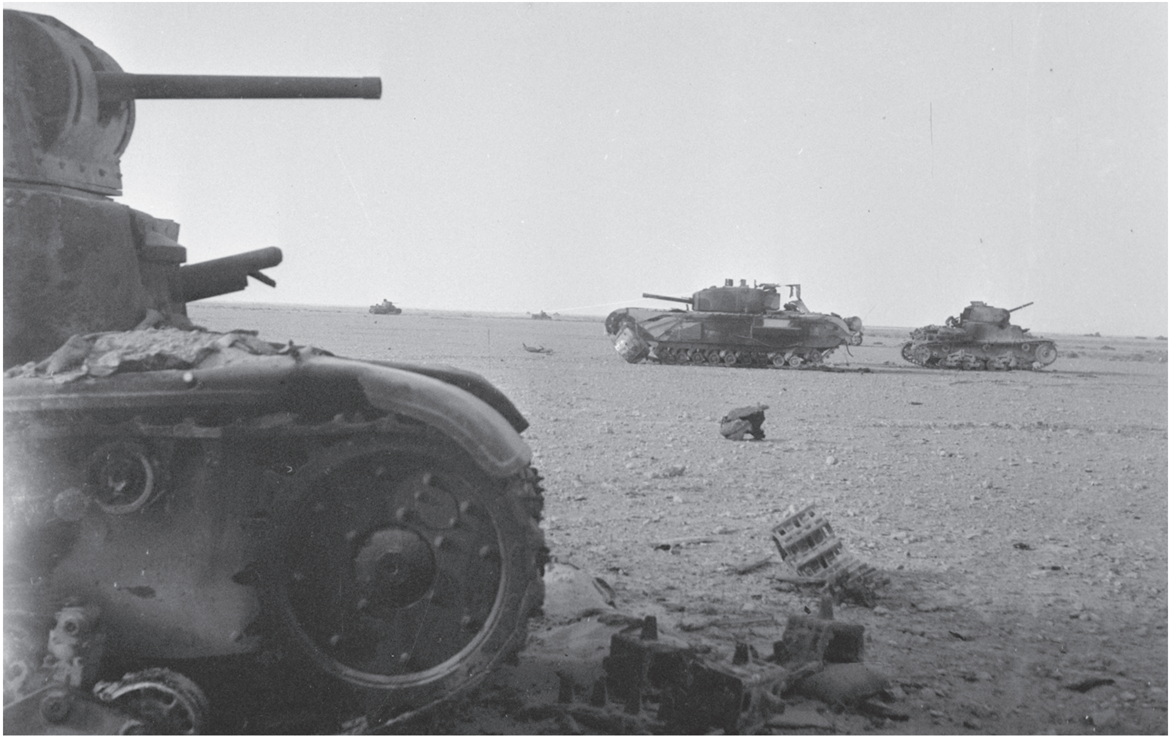
During the night of 2/3 November, Rommel began making preparations to conduct a fighting withdrawal from the El Alamein position. His intent was to initially pull back about 25 kilometres to the area of El Daba, then regroup at Fuka, where he thought he might be able to make a stand. In reality, the Panzerarmee no longer had the strength to conduct a linear defence and one piece of desert was as good (or bad) as another. The only sensible course of action was to retire as quickly as possible to Tobruk, if not further, but Rommel knew that his superiors in Berlin and Rome would not sanction a wholesale withdrawal. In order to buy time to prepare for retreat, Rommel ordered the 'Ariete' division to move up from the south to reinforce the position at Tell el Aqqaqir, so it could hold for another day. Rommel ordered von Thoma to make a stand with the remaining DAK mobile units at Tell el Aqqaqir in order to buy time for as much of the infantry and support units to escape westwards as possible. Yet there simply was not enough fuel and transport to move the entire Axis army back from El Alamein – roughly 1.7 V.S. of fuel was all that remained, which would be barely enough to get the motorized units to Fuka. The non-motorized units would have to be abandoned.

On the Allied side, Montgomery was relatively pleased by the destruction of Axis armour around Tell el Aqqaqir and downplayed the failure to achieve a breakthrough. Instead, he urged Lumsden to keep the pressure on the Axis forces and they would break. In an effort to try to take out some of the Axis gun line, Lumsden decided to commit the three battalions from the 7th Motor Brigade to a night attack to secure the Rahman Track. The attack went poorly: none of the battalions reached the track and two retreated before dawn. Only the 2 KRRC, with eight 6-pounder guns, managed to hold its ground. When dawn came on 3 November, 12 M14/41 tanks from the 'Littorio' division launched a counterattack against the 2 KRRC, but lost seven of their number to 6-pounder fire.[94] Major Norris King brought five of his Churchill tanks up to support the 2 KRRC but encountered very heavy anti-tank fire from a range of about 1,000 metres. Second Lieutenant Howard's Churchill was disabled by 34 hits; two 5cm hits damaged the idler wheel on one side, his 6-pounder gun was disabled and a hit on the cupola wounded the commander. After a short action, in which the Churchill tanks accomplished very little beyond demonstrating their ability to absorb punishment, Major King withdrew his tanks. One of the five Churchills was still fully functional. In two brief combat actions, Kingforce had fired about 65 6-pounder rounds, suffered nine casualties and its tanks had been hit 108 times.[95]

Montgomery was aware, from ULTRA intercepts of German Enigma communications, that Rommel intended to begin withdrawing his army on 3 November.[96] Yet with victory within his grasp, Montgomery proved noticeably slow in making plans for 8th Army to switch to a pursuit operation. On the morning of 3 November, Briggs' 1st Armoured Division began a cautious probing effort, engaging any enemy guns or tanks which fired upon them. Once again, Allied airpower pounded Rommel's army, with 376 bomber sorties during the course of the day. Yet the 1st Armoured Division still did not reach the Rahman Track, and von Thoma's DAK and the Italian XX Corps were able to maintain enough resistance to deter Lumsden's X Corps from simply trying to brute force its way through their remaining guns and tanks.

Meanwhile, the rest of the Italo-German army (ACIT) was in full flight and streaming westwards along the coast road to El Daba. Allied air reconnaissance did not detect the increase in enemy movement westwards

Three Churchill III tanks from the improvised Kingforce were committed into the fighting near the 'Snipe' position on 27 October, but one was destroyed and the other two received multiple hits. Here, a lone Churchill is surrounded by several knocked-out Italian M14/41 tanks. (IWM, E18830)



until late morning, at which point the RAF switched from close air support strikes around Tell el Aqqaqir to interdiction sorties against traffic on the coast road. Initially Rommel had told von Thoma that he need only hold until darkness fell, at which point he could disengage and withdraw. The 90. leichte Division was designated as the rearguard unit. However, at 1530 hours Rommel received a direct order from Hitler that forbade retreat and ended with the invocation that 'you can show your troops no other way than that to victory or death'. Rommel was dumbfounded but obediently told von Thoma (whom he disliked) that there was a change in plans – his mission was now to die-in-place at Tell el Aqqaqir. At the same time, Rommel began working his personal network connections to try to get Hitler to rescind his order. Somehow, von Thoma managed to hold his position throughout 3 November, with 90. leichte Division in the north around Sidi Abd el Rahman, the two Panzer-Divisionen serving as a covering force along the Rahman Track and Arena's 'Ariete' division anchoring the south end of the line at Tell el Aqqaqir. However, von Thoma's right flank was vulnerable, with only a battlegroup from the 'Trieste' division providing support.

Montgomery should have been mounting a full-court press at this time, with the enemy retreat already detected, but he did not. Instead, he satisfied himself with introducing Harding's 7th Armoured Division into the fight, but south of Tell el Aqqaqir. Montgomery was innately cautious and unwilling to run risks to his reputation when the battle was all but decided. His mindset was sequential: first, mop up pockets of resistance, then conduct a pursuit. After X Corps spent most of 3 November in ineffectual long-range duelling with the DAK, Lumsden finally decided to request some infantry night attacks to clear away some of the remaining enemy anti-tank guns. At 1800 hours on 3 November, a single infantry battalion (the 5/7 Gordons from the 51st Highland Division) and one squadron of Valentines from 8 RTR mounted an attack to try to eliminate some of the enemy guns south of Tell el Aqqaqir. Rather unusually, the British attacked with three platoons of infantry from the 5/7 Gordons riding on the outside of the Valentine tanks. The evening attack turned into a fiasco, with the infantry suffering heavy casualties and 8 RTR losing nine Valentines to anti-tank fire and 11 more damaged.[97] Another night attack, launched by two infantry battalions from the 5th Indian Brigade at 0400 hours on 4 November, was more successful; indeed, Nial Barr claimed that 'at last there was a gap for the British armour to drive through into the desert beyond Tel el Aqqaqir'.[98] In fact, the Indian attack not only succeeded in pushing back the Italian covering force, but caused the 'Trieste' division to fall back in disorder. Von Thoma reported that enemy forces were slipping past his open left flank, but Rommel did not believe it.[99] The sudden withdrawal of the 'Trieste' division was the event that caused the thin Axis line to begin to disintegrate. Resistance around Tell el Aqqaqir suddenly evaporated before dawn and Indian infantry occupied that position at 0645 hours. Armoured cars from the South African 4/6 SAACR quickly pushed forward into the void.

Around 0900 hours on 4 November, Fisher's 2nd Armoured Brigade began advancing toward the Rahman Track, with 10th Hussars in the lead. Many of the guns that had been positioned along the Rahman Track had pulled back during the night, as part of an effort to save some of the valuable 8.8cm Flak guns. Von Sponeck's 90. leichte Division formed the rearguard at Sidi Abd el Rahman to protect the withdrawal on the coast road, with the remnants of the 21. Panzer-Division on their right flank. Expecting this to be the final battle of the Afrika Korps, von Thoma decided to personally lead his remaining Panzers using tanks from the *Kampfstaffel*, which were deployed near the large sand dune at Tel el Mampsra, west of Tel el Aqqaqir. Since most of the Axis forces had pulled back from the Rahman Track during the night, the 10th Hussars managed to advance over 3,000 metres without meeting much resistance until they approached Tel el Mampsra. Von Thoma's tanks were mostly short-barrelled, older Pz III models, which had no chance against Shermans and Grants, but the 10th Hussars were led by Major R. M. Milbanke's C Squadron, equipped with Crusaders. Von Thoma's Panzers brewed up a number of Crusaders, including Milbanke's. Brigadier Briggs, advancing with the 10th Hussars, was fortunate to survive when his command tank was hit by an 8.8cm shell. However, the arrival of the 10th Hussars' two medium squadrons changed the tactical equation; six German tanks and one 8.8cm gun were quickly knocked out. Captain Richard Keane, commander of a Sherman in C Squadron, spotted a lone Pz III, which he hit with an armour-piercing round. The Pz III immediately began to burn and its crew jumped out. Captain Grant Singer, leader of the 10th Hussars reconnaissance troop, drove up in his Daimler armoured car to capture the enemy commander and was surprised to discover that it was von Thoma. After von Thoma surrendered, another 300 German troops emerged from nearby trenches to give up, as well.[100] Singer hurriedly ferried von Thoma back to brigade headquarters, which sent him forthwith back to 8th Army headquarters. Thus, Montgomery was nonplussed to find the commander of the Deutsche Afrika Korps suddenly brought into his presence. Later, according to some sources, Rommel tried to disparage von Thoma and insinuate that he had 'defected' to the British, but von Thoma had gone out of the battle like a true tanker, fighting until his tank was burning around him.[101]

While von Thoma's DAK was trying to fend off Briggs' 1st Armoured Division, Arena's 'Ariete' division was making its own stand against Harding's 7th Armoured Division about 15 kilometres south-west of Tell el Aqqaqir. Arena still had about 100 M14/41 tanks operational, his Semoventi and a good portion of the XX Corps artillery, which included both 8.8cm and 90/53 Flak guns. Thanks to the 5th Indian Brigade's successful attack, Harding's 7th Armoured Division was able to negotiate its way through the Axis minefields and begin advancing westward. Roberts' 22nd Armoured Brigade (which had about 80 tanks) was in the lead, followed by Roddick's 4th Light Armoured Brigade. Lumsden wanted Harding's division to make a sweeping manoeuvre west through the desert in order to outflank and cut off the retreating Afrika Korps somewhere east of Fuka, although Montgomery was uncertain about this recommendation. Interestingly, the situation was very similar to some of the tactical problems simulated during the mechanized manoeuvres at Tidworth in the early 1930s – this was exactly the kind of mission that British cruiser tanks had been intended to execute.

Arena had dug in many of his tanks to enhance survivability, while relying on his long-range artillery to fend off the British armour. All three Italian tank battalions were facing Roberts' brigade.[102] Arena's mission was simply to delay the enemy as long as possible in order for other Axis units to escape to Fuka. Armoured cars from the 11th Hussars were the first to spot the 'Ariete' division positions. When Roberts' brigade first approached the positions held by the 'Ariete' division, he immediately sent the 1 RTR and 5 RTR to attack, but the Italian artillery fire was heavy enough to discourage any effort to get too close. At that point, Roberts decided to avoid casualties and gradually wear down the Italians with long-range fire. Indeed, he treated the one-sided action as merely a gunnery exercise, bringing up his Crusader IIIs so they could try out their 6-pounders.[103] Since the M14/41 tanks were badly out-ranged by the 75mm guns on the Grants, they just had to sit there and take it – at least 29 were knocked out. Harding allowed this to go on for hours. Under these circumstances, the proper response should have been 'bypass and haul ass' (in soldier's language), leaving a small force to contain the 'Ariete' division and push on with a brigade to cut off the escaping Axis forces. Instead, the neophyte Harding decided to use both brigades to envelop the 'Ariete' division, which he thought was accomplished by 1530 hours. The 7th Armoured Division did not actually mount a full-scale attack on the nearly immobilized Italian division for another two hours, which finally overran most of the enemy positions. Amazingly, only 450 Italians were captured in this 'pocket'.[104] Apparently, after delaying the 7th Armoured Division all day, Arena managed to escape, along with Tenente Colonnello Renzo Baldini's XIII Btgl. Carri M., a battery of Semoventi and some of the Bersaglieri. While the 'Ariete' division had accomplished its mission, Harding's battle performance to date had been far more dilatory than that of either Briggs or Gatehouse, but Montgomery did not criticize him as he did the other armoured division commanders.

With Kesselring's imprimatur, Rommel finally ordered a full-scale retreat at 1730 hours. Five hours later, formal authorization from Hitler arrived. After von Thoma's capture, Montgomery finally began mentally switching into a pursuit mindset, but his decisions were odd, to say the least. In defiance of the principle of unity of command, no single commander was appointed to lead the pursuit, even though Montgomery had formed X Corps specifically to be a 'corps de chasse'. He did not trust Lumsden or any of the senior armour leaders enough to give them remit to conduct independent operations. In a true mechanized pursuit, Montgomery would be reduced to a resource manager, pushing fuel forward, while his subordinates made the key decisions at the tip of the spear. Montgomery would have none of that – he would not unleash the hounds.[105] Instead, he allowed Freyberg to mount his own pursuit (with two squadrons of Stuart light tanks and some armoured cars) to Fuka, while 1st and 7th Armoured Divisions were pointed in the general direction of Mersa Matruh. The key unit in the Allied pursuit was Brigadier Custance's 8th Armoured Brigade, which had about 75 operational tanks on the afternoon of 4 November. Custance was ordered to advance 27 kilometres to El Daba and cut off the retreating DAK by dawn on 5 November. However, Custance's brigade did not begin moving until 1930 hours and then moved only 2 kilometres before stopping for the night (Custance had been specifically ordered to make a night march). The 8th Armoured Brigade did not resume its advance until 0600 hours and by the time that it reached El Daba, the DAK was already en route to Fuka.[106] Captain Grant Singer, from 10th Hussars, was leading the advance until his armoured car was destroyed by a single 8.8cm Flak gun, guarding the road near El Daba. During the morning, the 3 RTR managed to ambush a retreating column from the Italian XX Corps, knocking out a number of M14/41 tanks and taking about 1,000 prisoners.[107] Yet rather than enemy anti-tank guns, mines proved to be the main impediment to 8th Army's pursuit. Lieutenant Bill Close, a troop leader in A Squadron 3 RTR, was one of the lead vehicles. He recalled:

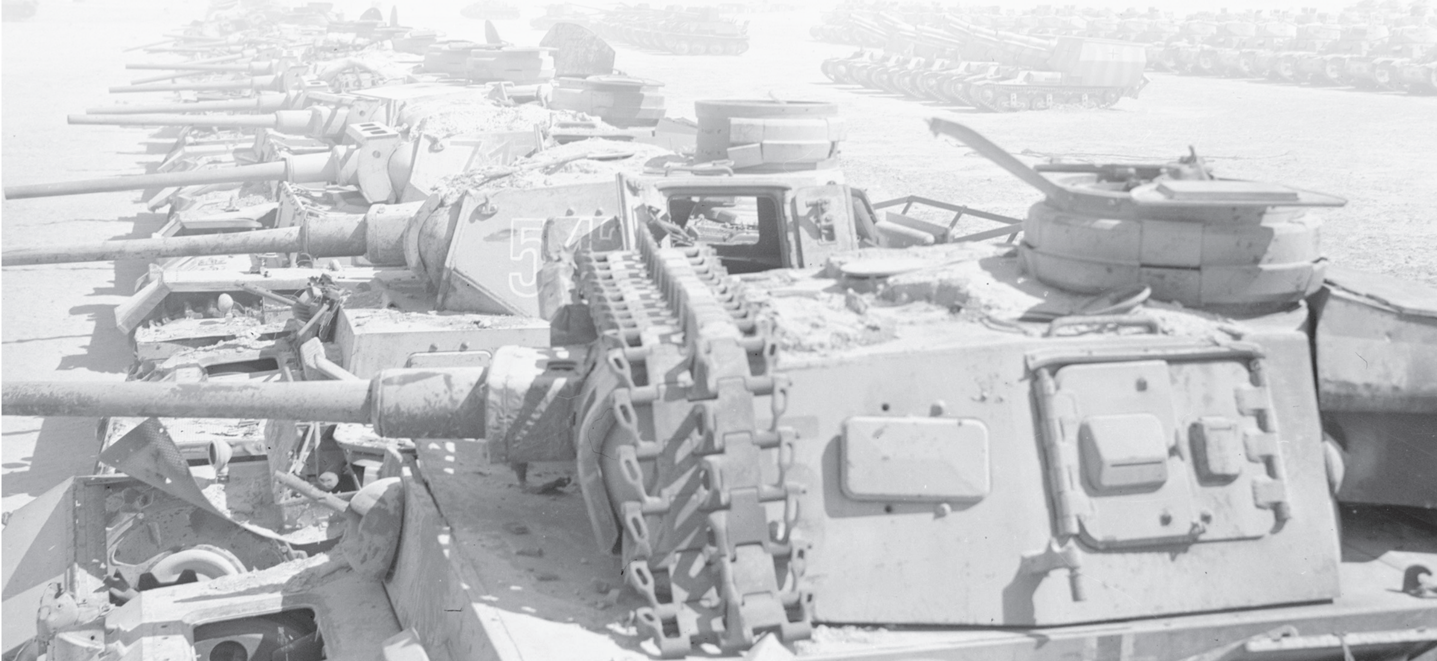
> At one point we had to cross a narrow wadi strewn with boulders. Just as I reached the floor of the wadi there was an almighty bang and I found myself hanging onto the turret at a crazy angle. An anti-tank mine had blown off one of the tank tracks and a bogie wheel had collapsed. No one was hurt but the tank was completely disabled and partly blocking the route through the wadi… one of my crew, Trooper Evans, looking around to see if he could spot any more mines, stood on an anti-personnel mine… Two of my crew died instantly.[108]

The RAF might still have prevented Rommel from making good his escape if it had focused all its efforts on battlefield interdiction sorties against traffic on the coast road on 5 November, but it did not. Instead, RAF bomber and fighter-bomber sorties all dropped off markedly to just one-third of what they had been two days before. According to the official history, the 8th Army (Montgomery) was worried about fratricide – the RAF might mistake pursuing British tanks for retreating German tanks, so it was thought better to play it safe.[109]

Although Rommel managed to escape with 11 German and ten Italian tanks, 35 anti-tank guns, 65 field guns and 24 8.8cm Flak guns, plus about 7,500 combat troops, he clearly could not make a stand at Fuka and was forced to keep retreating.[110] He was in poor health during the retreat, which very likely affected his decision-making; the bold aggressive spirit and willingness to take chances was gone. The Italian retreat was more chaotic, with no real combat capability remaining. Although Roberts' 22nd Armoured Brigade nearly caught the 21. Panzer-Division when it ran out of fuel south-east of Mersa Matruh, the Afrika Korps finally received a stroke of good fortune.

Heavy rains began on the afternoon of 6 November and lasted for two days, temporarily halting the British pursuit. The British spearhead units were also running out of fuel, since it proved difficult for the RASC to support a rapid advance after months of static warfare.[111] Scrounging up just enough fuel to keep moving, Rommel crossed back into Libya on 10 November. Even before learning about the Allied landings in Algeria and Morocco, he had already decided to fall back to El Agheila, despite orders from the Commando Supremo to make a stand. Rommel relied heavily upon mines to slow the British pursuit – which were helpful – but rain and inadequate logistic planning was more effective in slowing the British pursuit. By 11 November, the British pursuit was no longer in contact with the 90. leichte Division rearguards. At 0800 hours on 13 November, the armoured cars of B Squadron, 11th Hussars were the first to enter a gaunt-looking Tobruk – there was no resistance. After Tobruk, Lumsden could only keep up the pursuit with the 4th Light Armoured Brigade (11th Hussars, 12th Lancers and 1st Royal Dragoons), since these armoured car regiments were easier to sustain in the vanguard. On the morning of 20 November, the 11th Hussars entered Benghazi, which had been shattered by American bomber raids.

Rommel's own fuel situation was even more disastrous, despite moving closer to Tripoli; he informed the Commando Supremo that he required about 60 tons of fuel per day to continue his retreat, but was lucky to get half that amount (usually delivered by Luftwaffe Ju-52 transports). South of Benghazi, the remnants of the DAK were virtually immobilized by lack of fuel. Long columns of motor vehicles lined the Via Balbia heading south, eerily reminiscent of the Italian retreat two years before. Lieutenant Colonel Anthony Pepys' 1st Royal Dragoons boldly tried to reach the coast road south of Benghazi, but bumped into a battlegroup of the Italian 'Centauro' division (131ª Divisione Corazzata 'Centauro') near Antelat. Once again, Rommel took advantage of a lucky break – a small fuel resupply and more heavy rains



Some of the captured Axis AFVs after the Battle of El Alamein, with a row of long-barrelled Pz III medium tanks in the foreground. Note in the next row at least six Marder II tank destroyers and seven Sd.kfz.135/1 Lorraine Schlepper 15cm self-propelled guns. (IWM, E 26958)

– to slip away from his pursuers and reach Mersa Brega. By that point, the 8th Army's supply lines were stretched to the limit and Rommel was able to pause unmolested at Mersa Brega for over two weeks.

Maresciallo Ettore Bastico, his nominal superior, ordered Rommel to retreat no further and to make a stand at Mersa Brega. Kesselring also ordered him to hold. As usual, Rommel ignored his chain of command and tried an end-run with a personal appeal to Hitler. On 28 November, he flew back to Europe and proceeded to the *Wolfschanze*, Hitler's headquarters in East Prussia. Hitler was not amused to see Rommel turn up unexpectedly, exclaiming, 'how dare you leave your theatre of command without my permission!'[112] Nevertheless, Rommel tried to argue that North Africa could no longer be held and that the remnants of his army should be evacuated, unaware that Hitler and the OKH were dealing with a far larger crisis – the encirclement of the 6. Armee at Stalingrad. Aside from some thin promises about additional reinforcements, Rommel got nothing from his meeting with Hitler. Rommel's antics had been tolerated when he delivered victory, but in defeat, he was regarded as no different than any other German commander. Dejected, he returned to North Africa on 2 December. Hitler, Kesselring and the Commando Supremo now regarded Rommel as having lost his nerve – which appears to have been a fair assessment.

Rommel's Panzerarmee Afrika had been wrecked in the Battle of El Alamein and the subsequent retreat, even though two-thirds of the German troops escaped. The loss of veteran combat leaders like von Thoma, Teege and Stiefelmayer was particularly painful, since they could not be easily replaced. Both the 15. and 21. Panzer-Divisionen were burnt out and would require a large influx of trained replacements and new equipment to restore any kind of real combat capability; Montgomery had crippled, but not destroyed, the Afrika Korps. On 2 December, the DAK possessed only 53 operational tanks.[113] Although small numbers of Italian survivors from the 'Trieste' division made it back to Mersa Brega, both the 'Ariete' and 'Littorio' divisions were disbanded before the end of November. On the Allied side, the 8th Army had suffered 13,560 casualties (including 4,610 dead or missing) – less than 7 per cent of its starting strength – but it was running short of both infantry and tankers by the end of the battle. The reliance on Dominion infantry was part of the problem, since there were no more Australian or New Zealand replacements in the pipeline for the Middle East. However, the shortage of British tank crew replacements was more due to personnel policies in the British Army, which emphasized support over combat units. Statistically, the number of 332 British tanks knocked out (about 150 were listed as totally destroyed) at El Alamein does not sound excessive, although it should be remembered that the losses in the 9th Armoured Brigade could not be made good (the unit was disbanded) and the 7th Armoured Division was under strength for the entire battle. Despite their overall 2 to 1 numerical superiority in tanks, the 8th Army had a difficult time actually employing armoured mass at a time and place where it could make a difference.

By the Battle of El Alamein, the 8th Army was using its Crusader tanks in the reconnaissance and pursuit roles, since their battlefield survivability against modern anti-tank weapons was poor. (IWM, E19353)

A 6-pounder anti-tank gun in action at El Alamein. The hard-to-spot 6-pounder guns in the 'Snipe' position wreaked havoc on the Axis armour. (IWM, E16407)

One of the most extraordinary aspects of the tank fighting at El Alamein is how little the armoured units actually manoeuvred on the battlefield. After conducting a forward passage of lines during both *Lightfoot* and *Supercharge*, the British armour tended to just deploy on line near their objectives and blast away at enemy armour/anti-tank guns, spending days in more or less the same spot. British armoured units were often forced to replenish fuel and ammunition under fire, which was tough on the A- and B-echelon troops. Due to endemic fuel shortages, the German armour was forced to fight a non-doctrinal battle of position. As soon as a British penetration corridor was identified (which proved difficult during *Lightfoot* because there were two), all available Panzers were sent to try to contain the breach, which proved generally successful. Yet rather than the standard German tactical doctrine that emphasized manoeuvre (*Bewegungskrieg*), the Afrika Korps at El Alamein was forced to rely upon firepower – and it simply did not have enough. Inevitably, the 8th Army's advantage in firepower, particularly with the Sherman tank, gradually swung the battle in their favour, although the margin was often slim.

In terms of armoured warfare, the two key questions about El Alamein are (1) why did the British fail to achieve a clear breakthrough? and (2) why did the pursuit fail? British planning for the infantry-artillery-engineer part of the two main set-piece attacks was quite good, which is why they succeeded in creating viable penetration corridors. However, the level of planning for the armoured units did not go into any great detail beyond mine-clearing and movement procedures in the penetration corridors. The unrealistic expectation of senior infantry officers that a large mass of armour could quickly move through a defended obstacle belt in a single night also contributed to a great deal of unnecessary friction between the combat branches. Once the British tanks emerged from the penetration corridors, the actions on contact were simply to engage and destroy enemy armour and anti-tank guns, in essence to win a protracted battle of attrition (Montgomery's 'dogfight'). The main tactical problem was that the British armour kept attacking straight into the arms of the DAK reserves, which led to heavy losses on both sides. Furthermore, there was very little effort to reduce the enemy armour reserves prior to the moment of contact; granted, the RAF aircraft of October 1942 were not well suited to this task and the first rocket-equipped Hawker Typhoon ground attack aircraft would not become operational until September 1943. Yet concentrated air strikes could have done more damage to the Axis armour if they had been properly planned. Therein was part of the problem: Montgomery did not get on well with the leadership of the Desert Air Force and was uncomfortable with the kind of joint planning effort required for true air-ground cooperation.[114] Thus, when force-on-force contact occurred, the enemy armour was still relatively intact and organized – the preparatory bombardments had barely scratched them.

In order to achieve the kind of breakthrough envisioned by Montgomery, with only a 2 to 1 numerical edge in armour, the 8th Army should have attacked somewhere further away from the enemy's armoured reserves –

A captured German Pz IV Ausf G with the 7.5cm L/48 gun being examined in Cairo, December 1942. By sending samples of their latest tanks to North Africa, the Germans enabled the Allies to learn from the latest armour technology. (IWM, E20670)

namely, in the south. With the information available at the time from ULTRA, the most efficient use of Allied resources would have been to mount *Lightfoot* in the south against the less well-equipped Italian X Corps, which would have effectively pinned the 21. Panzer-Division permanently in the south. Then Montgomery could have shifted his main effort to the north, against 164. leichte Division and 'Trento', without having to fight two Panzer-Divisionen simultaneously. As it was, Montgomery's armour did not gain a clear superiority until the final two days of the battle. Even then, decimated Axis units still proved capable of serving as roadblocks until destroyed. Nevertheless, Montgomery did succeed in defeating Panzerarmee Afrika, albeit in a rather inelegant fashion.

As for the pursuit, it was an afterthought for Montgomery, something to be done after the battle had been won. As an infantryman, he was focused on the break-in aspect of the battle, but pursuit is a cavalryman's passion. Indeed, in life there are few experiences more exhilarating or gratifying than the pursuit of a defeated foe; the German Heer enjoyed its romp across southern France in the heady days of June 1940, with major cities falling after little or no resistance. Likewise, Patton's 3rd Army was envigorated by its rapid advance across France in August 1944, liberating Paris and hounding the defeated Wehrmacht back to the German border. Yet there was little joy or elation in the 8th Army's pursuit of the broken Afrika Korps across North Africa, perhaps because the occupation of dreary, burnt-out towns like Tobruk and Benghazi offered so little satisfaction. A successful pursuit operation needs to be ruthlessly conducted day and night, maintaining contact with the enemy and preventing him from reforming. Montgomery would make a similar mistake after the Battle of Falaise in 1944 in failing to cut off the defeated enemy's escape. Yet Montgomery was not entirely to blame. The British Army had not thought much about large-scale pursuit operations in the interwar period (even with the example of Allenby's successful pursuit of the Turkish Army after the Battle of Megiddo in September 1918), so existing doctrine was not much help and the two previous pursuit operations in the desert in 1940–41 had been very improvised affairs. Montgomery's pursuit was flawed, but not much different than O'Connor's or Auchinleck's.

On the Axis side, Panzerarmee Afrika's armoured units generally fought well, despite the unfavourable circumstances. The one exception was the fighting around 'Snipe', which was something of an anomaly for both sides. In previous actions around El Alamein, Panzerarmee Afrika had used armoured counterattacks to demolish several Allied brigades that had conducted night infiltration attacks but at 'Snipe', a single small battalion virtually destroyed one of Rommel's Panzer-Abteilung. It should also be noted that the Italian tankers fought bravely and aggressively throughout the Battle of El Alamein, even though their M14/41 tanks were no longer capable of achieving much on the battlefield. The DAK and XX Corps rearguard actions were well fought, serving to delay the Allies at vital moments and ultimately allowing at least some of the Afrika Korps veterans to live to fight another day. The only real variable on the Axis side was logistics. If Allied aircraft had somehow missed the Italian tankers en route to North Africa in October, Rommel would have had enough fuel to fight differently at El Alamein. It is possible, with say five more V.S. of fuel, that the Afrika Korps might have fought *Supercharge* to a standstill, destroying enough of Montgomery's armour to prevent a breakthrough, but the respite would only have been temporary. Even if X Corps had been stopped cold on 2–4 November, Panzerarmee Afrika's own losses would still have been debilitating, rendering it as a pyrrhic victory. With Allied troops pouring into Algeria and Morocco, a tactical victory at El Alamein would not have altered Panzerarmee Afrika's rapidly deteriorating strategic situation.

CHAPTER 4:
BROKEN FIELD RUNNING

THE RACE FOR TUNISIA: NOVEMBER–DECEMBER 1942

'We cannot train troops to fight in the desert of North Africa by training in the swamps of Georgia.'

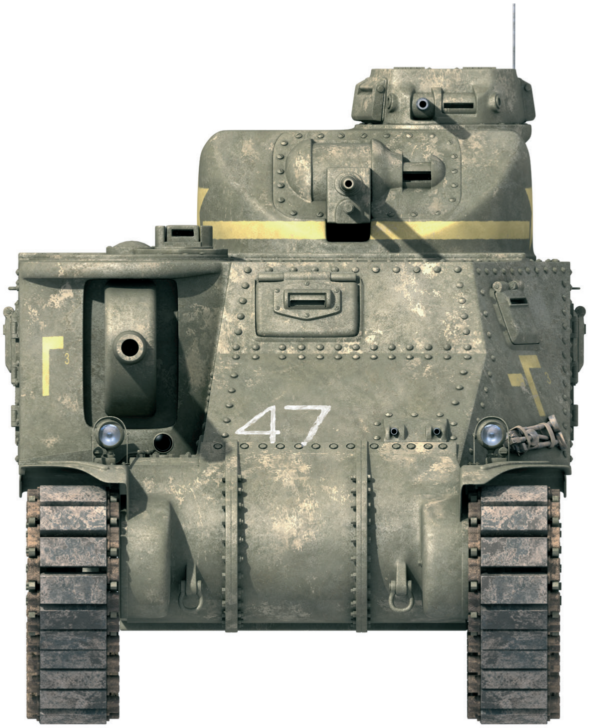
Patton, April 1942[1]

In March 1942, anticipating the likelihood of US Army units deploying to North Africa, the War Department instructed Major General George S. Patton Jr (who was then commander of the I Armored Corps) to create a new manoeuvre training centre. The US Army was in desperate need of manoeuvre space for training, since the rapidly expanding armoured force had outgrown the use of small training areas at Fort Benning and Fort Knox. In addition to the extant 1st, 2nd and 5th Armored Divisions (formed in 1940–41), six additional armoured divisions were forming by spring 1942. Patton chose a site in California's Mojave Desert, which was activated on 1 April 1942 as the Desert Training Center (DTC).[2] Unlike other training areas in the United States and England, the DTC was an extremely austere environment, which Patton regarded as essential for preparing troops to operate in the North African desert. The DTC, which Patton personally commanded between April and August 1942, was dubbed 'Little Libya'.[3] In the large expanses at the DTC (totalling 18,000 square miles), the US Army could conduct up to corps-size manoeuvres and live-fire training. Patton instituted a rigorous training regime at the DTC, stressing preparation for combat operations in North Africa; he was an extremely hands-on commander, and unlike other senior Allied officers, he was technically competent on tanks. Unfortunately, time was short and very few of the tankers who deployed to North Africa in 1942–43 had a chance to train at the DTC prior to their overseas deployments.

A Valentine tank from 50 RTR carries infantry from the 51st Highland Division in the advance to Wadi Akirit on 1 April 1943. In an attempt to increase tank-infantry cooperation, the 8th Army briefly experimented with allowing tanks to carry infantry on their decks. (IWM, NA1670)

It had been decided at the Arcadia Conference in Washington in December 1941 to deploy a US Army corps-size formation to the United Kingdom early in 1942; this force was code-named 'Magnet'. In addition to three infantry divisions, Major General Orlando Ward's 1st Armored Division was shipped over to Northern Ireland in May 1942. However, Ward's division was really just a reinforced combat command at this point, with two light tank battalions (1-1 Armor and 1-13 Armor) equipped with M3A1 light tanks and 2-13 Armor equipped with M3 medium tanks. The four months spent in Ireland at Ballykinler (Abercorn Barracks), a facility used for training Irish Yeomanry on the Valentine tank, were mostly consumed with administrative duties, VIP visits and limited company-level training.[4] Although the M3 medium tanks in 2-13 AR were provided several days on firing ranges to qualify with their 37mm guns, they were given only one day – a month prior to embarkation – to test fire their 75mm main guns. American-made ammunition was in short supply in Ireland, which greatly impacted training.[5] After the rest of the 1st Armored Division arrived in Northern Ireland, the bulk of the division was transferred to England on 29 October. However, Brigadier General Lunsford E. Oliver's Combat Command B (CCB) was detached to deploy to North Africa as part of Operation *Torch*. Ironically, Major General Ernest N. Harmon's 2nd Armored Division, which would also contribute a combat command to Operation *Torch*, did not train at the DTC either prior to overseas deployment.

While Patton was the most significant operational-level leader in the new US Armored Force, the organization and equipping of armoured units was directed by Major General Jacob L. Devers (commander of the US Army Armored Force), while armoured training was directed by Brigadier General Charles L. Scott (commander of the Armor Force Replacement Training Center at Fort Knox). Devers, an artilleryman by training, succeeded Adna Chaffee at a time when the US Army's Armored Force was in an unprecedented period of transition and expansion. In particular, the US Army had only begun to receive its first M3 medium tanks in mid-1941and the first M4 medium tanks in early 1942. Given that over 1,200 American-built tanks were sent to outfit the 8th Army in 1942, the US Army had not been able to fully equip its own armoured units with medium tanks and would have to deploy to North Africa with a significant number of M3 and M5 light tanks. Thus, the standard US Army armour regiment in late 1942 would have one medium tank battalion (equipped with either 54 M3 or M4s) and two light tank battalions (equipped with 54 M3 or M5 light tanks). Brigadier General Scott, a cavalryman, was the right man for guiding armour training, since he had been



Front view of US M3 medium tank, late 1942. Unlike the British, the US Army did not employ camouflage paint schemes on its tanks in North Africa, although individual crews sometimes attempted field expedient camouflage. (© Osprey Publishing Ltd, by Hugh Johnson. From NVG 113 *M3 Lee/Grant Medium Tank 1941–45*)

the senior American military observer assigned to the 8th Army in January–July 1942. Scott's first-hand knowledge of the combat performance of US-made tanks in the desert and the latest German armoured tactics helped to ensure that training was as realistic and up to date as possible. Indeed, the US Army was eager to inculcate lessons learned from ongoing armoured operations in North Africa, but given the hectic pace of forming, training and deploying new units in mid-1942, this was a challenging task.

While the US Armor Force was trying to prepare for overseas deployments, the situation of the nascent Tank Destroyer branch was considerably more muddled. Doctrine was a major problem since it had to be developed on the fly (its first manual, FM 18-5, was not issued until June 1942) based on manoeuvres that were not very realistic, and there was significant disagreement on whether the tank destroyers should be towed or self-propelled. Consequently, the War Department simply decided to create both towed and self-propelled tank destroyer battalions (a total of 55), which would be assigned as corps-level assets.[6] Unlike the Armor Force, which had been developing tanks for nearly two decades, no one in the War Department had foreseen a need for self-propelled tank destroyers, so all equipment was hastily assembled from existing technology. The tank destroyer battalions that would deploy to North Africa would be equipped with 12 M6 37mm GMC (gun motor carriage) and 24 M3 75mm GMC. The M6 GMC was essentially a 37mm anti-tank gun mounted portee on the back of a light truck, very similar to the British 2-pounder portee configurations, while the M3 GMC was simply a copy of the French M1897 75mm gun mounted on a half-track. Both were crude improvisations, of limited tactical value. During early 1942, the US Army Ordnance Department worked to create a better tank destroyer by mounting a 3-inch gun (76.2mm), developed from an anti-aircraft gun, on an M4 medium tank chassis; this design was approved in June and entered production in September as the M10 3-inch GMC.[7] The M10 had a powerful gun, equipped to fire the M62 APCBC/HE-T round, but it too was an improvisation that was plagued with a number of technical issues. Nevertheless, the M10 GMC would see combat in North Africa in March 1943.

Operation *Torch* would begin on 8 November 1942, in order to secure control over Algeria and Morocco. Allied planners hoped that the Vichy French garrisons in those countries would not resist the landings, but the amphibious forces were deemed adequate if resistance was encountered. Major

General Patton was given command of the Western Task Force that would land in Morocco, which consisted of CCB (1-66, 1-67 and 2-67 Armor Battalions) from Harmon's 2nd Armored Division, two independent light tank companies, a tank destroyer battalion and two infantry divisions. The Center Task Force would land Major General Lloyd R. Fredendall's II Corps at Oran in Algeria; this force consisted of Brigadier General Oliver's CCB (1-1, 1-13, 2-13 Armor Battalions) from 1st Armored Division and the 1st Infantry Division. Altogether, the US Army committed two medium and five light tank battalions to the initial phase of the operation, with a total of about 360 tanks (54 M4 mediums, 54 M3 mediums, 36 M5 lights and 216 M3 lights), along with two self-propelled tank destroyer battalions (601, 701). The Eastern Task Force, landing in Algiers, consisted of the British 78th Infantry Division and the US 34th Infantry Division, but initially had no significant armoured component.

The Allied ability to conduct an amphibious landing on an opposed shore with tanks was extremely limited at this point, which meant that only a few companies of M3 light tanks went ashore with the first waves. Medium tanks could not come ashore until port facilities were captured. Vichy French forces put up unexpectedly stiff resistance to the initial landings. An attempt to conduct a *coup de main* in the port of Oran, using Lieutenant Colonel George F. Marshall's 3-6 Armored Infantry Battalion (AIB), turned into a complete fiasco. Marshall was killed in action and his battalion suffered 346 casualties (including 189 dead), costing 1st Armored Division one of its manoeuvre battalions in the opening moments of the operation.[8] Nevertheless, Patton's forces were able to land in Morocco and Fredendall's in Algeria. The Vichy French had two armoured cavalry units, the 1e RCA and 2e RCA (Regiment de Chasseurs d'Afrique), which mounted ineffectual armoured counterattacks on 9 November. In the action near Tafraoui Airfield, Captain William Tuck's B Company, 1-1 AR (M3 light tanks) and some M3 GMCs from the 601st Tank Destroyer Battalion engaged the 2e RCA and knocked out 14 of its obsolescent Char D1 tanks. One M3 light tank and one GMC were lost.[9] In another action near Port Lyautey, seven M5A1 light tanks ambushed a company-size group of Renault R35 tanks from the 1e RCA and knocked out four of them. Although a few American light tanks were knocked out in the sporadic inland fighting, the M3 and M5 light tanks proved superior to the obsolescent French tanks. French resistance in Algeria and Morocco quickly subsided and by 10 November the Vichy forces had agreed to a general cease-fire.

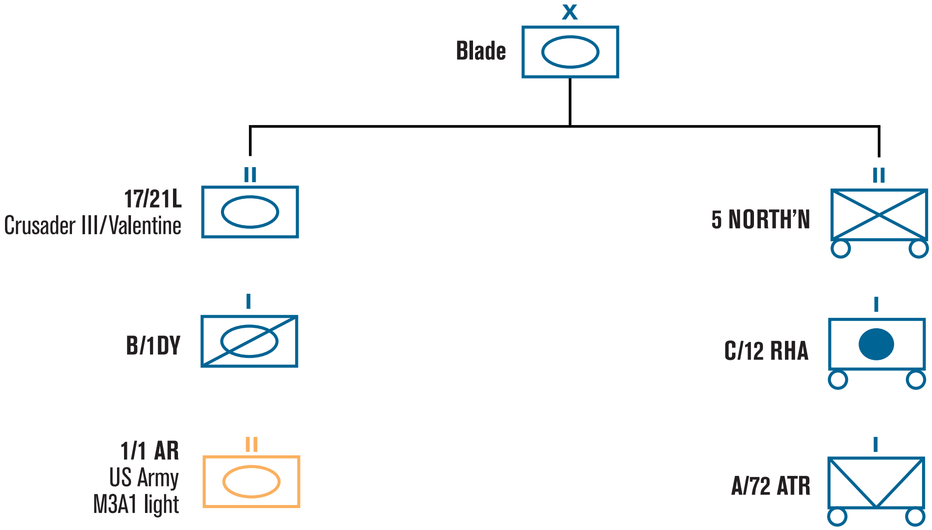
At his headquarters at Frascati outside Rome, Generalfeldmarschall Albert Kesselring (Oberbefehlshaber Süd or Commander-in-Chief South) reacted immediately to reports about the Allied landings in Algeria and Morocco. As a first step, he began negotiating with Vichy officials for landing rights in Tunisia in order to create a bridgehead for Axis forces. Général de division Georges Barré, commander of the French forces in Tunisia, had about 12,000 troops available (not including a large naval garrison), but his forces were equipped with obsolescent weapons and lacked air cover – so he stalled for time. While Kesselring was negotiating, General der Fallschirmtruppe Kurt Student, commander of the XI. Fliegerkorps, quickly organized an expeditionary force based upon Fallschirmjäger-Regiment 5 (FJR5) and Major Rudolf Witzig's Fallschirm-Pionier-Bataillon 21; altogether, three lightly equipped airborne battalions. Aside from these paratroopers, the only other German forces immediately at hand were five Afrika Marsch-Bataillone (Africa Replacement Draft Battalions), awaiting shipment to join Rommel's army in North Africa from Italy or Greece. Each of these replacement battalions (number T1–T5) was comprised of about 800–1,000 lightly armed troops, but they were hastily issued some mortars and anti-tank guns and prepared for embarkation.[10] On 9 November, the Vichy French officials in Tunisia reluctantly agreed to allow the Luftwaffe landing rights, but with the proviso that no Italian troops would be brought into Tunisia. Not wasting any time, Oberst Martin Harlinghausen flew into El Aouina airfield outside Tunis at 1055 hours with the lead elements of II./StG 3 (Ju-87D) and II./JG 53 (Bf-109G). The local French troops proved unfriendly and surrounded the airfield with armoured cars, but did not openly resist.[11] By the end of the day, Harlinghausen had 60 combat aircraft in country, but no ground troops. On the evening of 9 November, Hitler spoke with Kesselring and ordered him to get a ground combat element to Tunisia as quickly as possible. The OKW released the 10. Panzer-Division to Kesselring and promised other units as soon as possible. The transfer of the schwere Panzer-Abteilung 501 (s.Pz.Abt. 501), equipped with Pz VI Tiger tanks, was also expedited.

On the morning of 10 November, the first phase of *Unternehmen Braun* began when a single company of paratroopers, Fallschirmjäger-Kompanie Sauer, landed in Tunis. The Luftwaffe had about 25 operational Ju-52 transports and at least one Me-323 (which could carry up to 130 troops or 12 tons of cargo) to support the airlift, but quickly added in more aircraft. The Allies soon noticed the German airlift into Tunisia and conducted a low-level strike by RAF Beaufighters from Malta that managed to shoot up and destroy the Me-323 on the ground.[12] Daily Allied air attacks on Tunis and Bizerte followed, but they failed to seriously disrupt the opening weeks of the airlift operation. On 11 November, Generale Giovanni Imperiali with the staff of the L Brigata Speciale flew into Tunis to take command of Italian reinforcements heading into Tunisia. The Italian contingent would include the 10° Reggimento Bersaglieri, an armoured battlegroup from the 'Centauro' division, the 1° Reggimento San Marco (two battalions of naval infantry) and the infantry division 'Superga'. An air transport unit from the Regia Aeronautica joined the Luftwaffe in flying troops to Tunisia. By 12 November, there were enough Axis troops in Tunisia to seize the ports of Tunis, Bizerte and Sfax, so heavy weapons could be brought in by sea. That evening, two transport vessels arrived in Bizerte with the 4. Kompanie of Major Henning von Blomberg's Panzer-Abteilung 190 (originally intended for the 90. leichte Division), which had 17 tanks, 40 tons of ammunition and 101 tons of fuel. An artillery battery and four 8.8cm Flak guns were also brought in by sea to Tunis. In order to take charge of the expanding German expeditionary force, Oberst Friedrich von Broich formed the various detachments into Division von Broich. On 15 November, General der Panzertruppen Walter Nehring, still recovering from his wounds at Alam Halfa, was appointed commander of Axis forces in Tunisia (Befehlshaber Tunesien); he arrived there two days later.[13] Amazingly, within the span of less than a week – and with no prior planning – Kesselring had managed to move a 4,000-man blocking force into Tunisia. While small, the blocking force also benefitted from significant close air support. Général Barré, the French commander, opted to abandon Tunis and withdraw his forces to Medjez el Bab, in order to avoid his troops being disarmed by the Axis.

Meanwhile, once the Allies were established in Algiers, Lieutenant General Dwight D. Eisenhower (Allied theatre commander) activated Lieutenant General Kenneth A. N. Anderson's 1st Army and directed it to 'build up rapidly a striking force through Algiers and adjacent ports' in order to 'occupy Tunisia at the earliest possible date'.[14] The distance from Algiers to Tunis was over 650 kilometres along not very good roads, during the rainy season – which made a ground advance problematic. Although the Allies would have preferred to make a direct amphibious or airborne descent upon the key ports in Tunisia, the strong Luftwaffe presence in Sicily rendered this course of action too risky. Instead, Eisenhower and Anderson adopted a hybrid 'leap-frog' approach to moving into Tunisia, which mixed small amphibious landings, paratroop landings and fast-moving motorized columns. By securing ports (for logistics) and airfields (to enable air support), the Allied forces would obtain a solid basis for operating in the region. The first tentative step to implement this strategy was made on the morning of 12 November, when two companies of British paratroopers occupied Bône airfield in eastern Algeria, just 225 kilometres from Tunis. A British infantry brigade had already landed in the port of Bougie, which enabled RAF Spitfire fighters to be flown in, providing a small measure of air cover over eastern Algeria.

Anderson was an odd choice to lead an unorthodox advance into Tunisia. An infantryman by training, he had little experience commanding large formations. Nor did Anderson have previous experience with armour, paratroopers, mobile warfare or joint operations with Allied forces. Indeed, Anderson was regarded by his peers as a rather mediocre commander, but in November 1942 Britain was short on experienced ground commanders, so he would have to suffice. Patton would have made a far more aggressive officer to lead the advance into Tunisia, but Eisenhower left him in charge of occupation duties in Morocco.[15] Operation *Torch* was the first joint operation conducted by the Allies in the Second World War and Eisenhower was keen to avoid friction between American and British forces. Patton was energetic and

BLADE FORCE, 24 NOVEMBER 1942



experienced in mobile operations, but regarded by some as unpredictable. Consequently, Anderson got the nod to lead the advance, while Patton was sidelined in Morocco. It proved to be a major mistake, with serious consequences for the campaign in Tunisia.

Initially, Anderson's 1st Army had very few forces in hand to support a ground advance into Tunisia. At the start, he was limited to elements of two infantry brigades (11, 36) from the British 78th Infantry Division, the British 1st Parachute Brigade (two battalions), one American airborne battalion (2-509 PIR) and one Royal Marine Commando unit. Anderson's only armoured component was a small group dubbed 'Blade Force' (from the British 6th Armoured Division), under the command of Lieutenant Colonel Richard Hull, a very capable cavalry officer. Blade Force disembarked at Algiers on 13–14 November and consisted of Lieutenant Colonel Richard G. Hamilton-Russell's 17/21st Lancers, B Squadron of the 1st Derbyshire Yeomanry (a reconnaissance unit equipped with armoured cars), one motorized infantry company (mounted on universal carriers and a few M3 halftracks), one battery of towed 25-pounder guns, one battery of towed 6-pounder anti-tank guns and some other small detachments.[16] The 17/21st Lancers had an odd organization which mixed infantry tanks together with cruiser tanks; each of its three squadrons had 11 Valentine tanks (some with 2-pounder and some with 6-pounder guns), three Crusader III with 6-pounders and two Crusader CS with the 3-inch howitzer.[17] Although Blade Force was ready to begin moving on 15 November, the main body of the 6th Armoured Division (and the rest of the British 78th Infantry Division) would not arrive at Algiers until 22 November (D+14), with additional elements not due until 6 December (D+28).[18]

Meanwhile, the only Allied armoured force of significance that could be committed quickly to Tunisia – Brigadier General Lunsford E. Oliver's CCB from the American 1st Armored Division – dawdled in Oran for two weeks. Apparently, Major General Fredendall, US II Corps commander, was not eager to transfer CCB to Anderson's command, but gradually consented to send the 1-1 AR (M3A1 lights), then 2-13 AR (M3 medium) to reinforce Blade Force.[19] However, the transfer of these forces was delayed by shortages of motor transport and problems with the French railways; the tall M3 medium tanks would not fit through the rail tunnels when mounted on flat cars and had to be moved forward by ship. It was not until two weeks after the landing at Oran that the rest of CCB was transferred to Anderson's command. Unnoticed at the time, CCB was also issued 'obsolete ammunition' (some sources say this was training ammunition, which was incorrect; rather, these were probably early M72 AP rounds), which would lead to problems in Tunisia.[20] Oliver was another odd choice to lead an armoured unit into combat, since he was a career engineer with no significant command or overseas experience. Indeed, Oliver had spent much of the interwar period building highways in Alaska and dams in Mississippi – not particularly useful for honing warfighting skills.

Tunisia was a significantly different environment than Libya or Egypt. The northern part of the country was populated and had a fairly well-developed road net, particularly near the ports of Tunis and Bizerte. Much of the terrain in the central part of Tunisia was mountainous or hilly (the western and eastern Dorsals) and either 'slow-go' or 'no-go' for tanks, which made valleys important mobility corridors for mechanized warfare. Consequently, armoured operations in Tunisia were more constrained than in the open desert. Another factor was that observation in Tunisia could be obstructed by agricultural settlements and terrain, which made close-range ambushes more practicable. On the other hand, food and water were readily available in forward areas, which eased logistic burdens to some extent. The southern part of Tunisia was more of a desert environment, akin to Libya.

Anderson decided to mount a two-pronged ground advance into Tunisia. A single battalion from the 36th Infantry Brigade was directed to advance along the northern route to Tabarka then Djebel Abiud, led by the armoured cars of Major William V. Hart's 'Hart Force' (one squadron from the 78th Division's 56th Reconnaissance Regiment). Major Hart reached Djebel Abiud on the night of 15/16 November, having crossed into Tunisia without meeting resistance. The main effort would be made in the south, with Blade Force and part of the 11th Infantry Brigade. Despite indications that Axis troops were already arriving in Tunis and with little appreciation for the distances involved, Anderson thought that his vanguard could reach the city within one week. Once the French made their rail system available, C Squadron from the 17/21 Lancers was selected to move by train to Souk Ahras, which it reached on 17 November. However, the rest of the 17/21st Lancers and Blade Force had to move the

The Italian Semovente L40 da 47/32 began to arrive in North Africa in early 1942 in order to form self-propelled anti-tank battalions for the two Italian tank divisions. The vehicle played a significant role in the Tunisian campaign and was the most numerous Italian AFV in North Africa by 1943. (Courtesy of Steve Zaloga)

600+ kilometres by road. Even with the provision of tank transporters, the rest of the regiment did not arrive until 21 November, but remarkably few vehicles were lost en route.[21] Eighty kilometres east of Souk Ahras, Lieutenant Colonel James Hill's 1st Parachute Battalion dropped into Souk el Arba on the morning of 16 November. Showing great initiative, Hill appropriated enough local motor vehicles to move a good portion of his battalion 45 kilometres further east to Béja (less than 90 kilometres from Tunis), where he linked up with Général Barré's forces. While still shying away from open resistance to the Axis occupation, Barré decided to cooperate with Allied forces once they appeared in Tunisia.

While Anderson was moving his forces piecemeal up to the Tunisian border, Nehring worked to expand the Axis bridgehead in Tunisia. Division von Broich had formed a defensive perimeter around Bizerte, while the Italians created a perimeter around Tunis. On 16 November, Kampfgruppe Witzig was established in order to provide a mobile combat group. Despite the limited amount of equipment available in Tunisia, the *Kampfgruppe* was a well-balanced force, based upon Witzig's airborne engineer battalion, the 4. Kompanie of Panzer-Abteilung 190 (with about 13 Pz III, Pz IVs), a battery of Italian Semovente L40 da 47/32 self-propelled anti-tank guns, a battery of towed 10.5cm howitzers and some 2cm Flak guns. It is also interesting to consider that Witzig was a Luftwaffe officer leading a *Kampfgruppe* that also comprised Heer (army) troops and Italian troops, which demonstrates that the Axis could form effective combat teams from very disparate sources. Nehring ordered Witzig to move to Mateur to block the expected British advance along the coast. On the afternoon of 17 November, Hart Force unexpectedly bumped into Kampfgruppe Witzig just east of Djebel

Abiud and quickly recognized that its scout cars and truck-mounted infantry were outmatched by enemy tanks. After losing four 2-pounder anti-tank guns and some of its vehicles, Hart Force was forced to pull back and wait for support from the 36th Infantry Brigade.[22]

Meanwhile, by the evening of 17 November Blade Force was still west of the Tunisian border and only had C Squadron 17/21 Lancers, B Squadron 1st Derbyshire Yeomany (DY) and B Company of the 10th Rifle Brigade (RB) on hand. Based upon information provided by the French commander in Béja, Blade Force learned that a French garrison was still holding the key position at Medjez el Bab, which had two intact bridges over the Medjerda River. If Blade Force could seize these bridges, the Allied follow-on forces would have a clear path to Tunis, only 50 kilometres to the east. Lieutenant Colonel Hull ordered B Squadron 1DY to move at first light toward this objective, with the rest to follow. Setting off before dawn, the lone squadron of Derbyshire Yeomanry moved nearly 200 kilometres across unfamiliar territory and reached Medjez el Bab by 1315 hours. Two hours later, the company from 10 RB arrived and Hull's command element arrived before nightfall on 18 November. Unexpectedly, an American artillery unit, the 175th Field Artillery Battalion (equipped with 12 25-pounder guns), suddenly turned up in Medjez el Bab as well.[23] Although the French still held the town, their position was very weak, even with this Allied support. At 0915 hours on 19 November, Hauptmann Wilhelm Knoche, commander III./FJR 5, led an attack against the French positions, supported by the Stukas of StG 3. The composite Allied force managed to hold the town for the rest of the day, but retired that night toward Béja. Both columns attempting to advance into Tunisia had now been stopped by small Axis forces, and it was clear that armoured support would be required in order to resume the advance. Anderson called a temporary halt to the advance into Tunisia in order to give time for the 78th Infantry Division to reach the front, as well as additional support units.

Allied logistics were rudimentary in eastern Algeria, with limited motor transport available and reliance on limited-capacity French-operated railways, which hindered the deployment of large armoured forces to support the advance into Tunisia.[24] Furthermore, by deploying additional Luftwaffe and Regia Aeronautica fighter groups into Tunisia (including the new Fw-190 fighter), the Axis had established local air superiority over the region. The Axis used their advantage in the air to relentlessly attack Allied forward airfields in Algeria and to harass ground columns moving eastwards – which forced Allied units to move at night in forward areas. Nevertheless, Allied aircraft were mounting regular raids on Bizerte and Tunis, which did achieve some successes. On 22 November, Major Henning von Blomberg, commander of Panzer-Abteilung 190, was killed near Mateur when his vehicle was attacked by Allied aircraft.

Despite skimpy logistics, Blade Force was able to assemble in Béja by 23 November and the forward elements of the 78th Infantry Division were reaching the front. The next day, Lieutenant Colonel John K. Waters' 1-1 AR reached Béja and was assigned to Blade Force. On the afternoon of 24

November, Anderson gave the order to resume the advance eastwards the next day, but left tactical planning to Major General Vyvyan Evelegh, commander of the 78th Infantry Division. Evelegh had spent most of his career in the British Army in staff or instructor billets, with negligible command experience, but somehow ended up in command of the Allied spearhead. His guidance to his subordinate units for the next phase of the advance was overly simplistic and essentially ignored terrain, weather and the enemy. In the north, the 36th Infantry Brigade was to resume the advance on Mateur (with E Company of M3 medium tanks from 2-13 AR in support), while the 11th Infantry Brigade advanced to secure Medjez el Bab. Blade Force was assigned to operate in between the two infantry brigades, pushing east from Sidi Nisr in order to reach Tébourba and Djedeida. Noticeably, Blade Force was assigned to operate in an independent role, with minimal infantry support. Air and artillery support for the advance were also minimal.

Although most of the American tankers about to see action in Tunisia were novices, with limited military experience, John K. Waters (1-1 AR) was a 35-year-old regular army cavalry officer, commissioned from West Point in 1931. Waters was also Major General Patton's son-in-law and the two men were cut from very similar cloth. Like Patton, Waters proved to be an aggressive and competent commander, willing to take risks. In contrast, the 31-year-old Hyman Bruss (2-13 AR) had joined the US Army as an enlisted soldier in 1930, gone through Officer Candidate School (OCS) in 1940, and was assigned to be S-4 (logistics officer) in 2-13 AR when the unit was shipped out to Ireland in May 1942. Somehow, Bruss was given temporary command of the 2-13 AR in August, but was still in command when Operation *Torch* occurred.[25] Most of the American tank company commanders and platoon leaders were either the product of OCS or university Reserve Officer Training Corps (ROTC) programmes, which meant that they had just a few years in the army prior to deployment overseas. Nevertheless, the initial batch of American company-grade armour officers were motivated and technically competent on their tanks. Indeed, the junior American officers tended to be more technically competent about tanks than their senior officers.

At 0700 hours on 25 November, Blade Force left Béja, marched 30 kilometres to the north-east and reached Sidi Nsir by 1300 hours. The Crusader III tanks of C Squadron 17/21st Lancers discovered a company of Italians defending the crossroads, supported by a pair of Semovente da 75/18. The Italian self-propelled guns opened fire first, knocking the track off one Crusader with an HE round and scoring a non-penetrating hit on a Valentine. The British tanks, supported by a company of their own infantry, quickly knocked out the two Semoventi and captured about 120 Italian personnel.[26] Colonel Hull ordered Waters' 1-1 AR to advance east along the Tine River valley, while the 17/21st Lancers advanced north toward Mateur – dividing Blade Force.

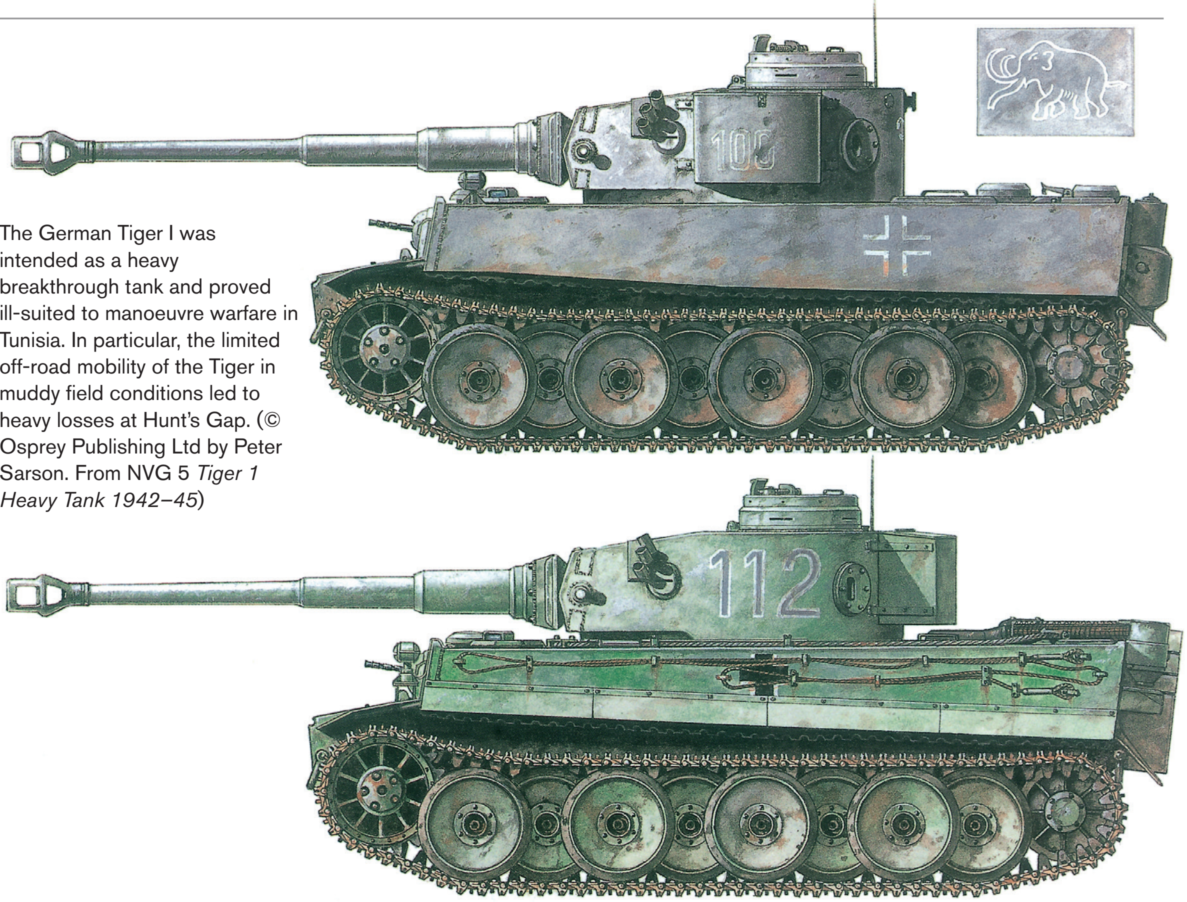
Marching eastwards with his entire battalion, Waters first encountered two Italian Semoventi L40 da 47/32 self-propelled anti-tank guns, which were knocked out. Soon afterwards, one of Witzig's engineer detachments was discovered occupying a farm complex along the road to Mateur, 2 kilometres north of the Chouïgoui Pass. Waters ordered his A Company to attack the farm, but without infantry support, the light tanks could not storm the position. With walls built of solid stone, the complex was resistant to 37mm armour-piercing rounds, even when fired at point-blank range. Furthermore, the German Fallschirmjäger had some light anti-tank weaponry, which knocked out one M3A1 light tank, and their intense automatic weapons fire damaged another tank. Waters brought up his 81mm mortar platoon to shell the farm, but the Germans inside held out. The Luftwaffe noted the ongoing action and repeatedly bombed and strafed Waters' battalion, but only inflicted one dead and two wounded.

Stymied at the farm, Waters decided to detach Major Rudolph Barlow's C Company, ordering it to proceed further east and conduct a reconnaissance of bridges over the Medjerda River near Tébourba. Nehring had concentrated his forces on the most likely enemy avenues of advance, but had left only screening forces elsewhere. When Major Barlow's M3A1 light tanks advanced through the Chouïgoui Pass, they found a gap in the enemy line. The pass itself was guarded only by a pair of German *Kubelwagen*, which were destroyed. Next, C Company advanced eastwards, ploughing through another enemy light detachment (probably from one of the replacement battalions) then captured the lightly guarded El Bathan bridge. Major William R. Tuck's B Company was ordered to hold Chouïgoui Pass, while Barlow's company continued advancing eastwards. After bypassing Tébourba, Barlow's lead platoon discovered that the nearby airfield at Djedeida was packed with enemy aircraft. Conferring with Waters by radio, Barlow decided to conduct an assault on the airfield at 1630 hours. Seventeen M3A1 light tanks suddenly appeared, catching the Luftwaffe crews completely by surprise. No ground defence had been established yet around the airfield. Barlow's tanks proceeded to shoot up all the parked aircraft with both main guns and machine-guns. The American tanks even fired 37mm canister rounds at some of the aircraft attempting to take off. A few German aircraft managed to get into the air and turned to strafe the American tanks, killing two tank commanders, including Lieutenant Bud Hanes.[27] Barlow's armoured raid succeeded in destroying at least 23 Luftwaffe aircraft (five Bf 109 fighters from 11./JG 26 and 18 Ju-87 from II./StG).[28] Barlow briefly considered pressing on to Tunis, just 24 kilometres away, but decided he had accomplished enough for one day and retraced his route to link up with his battalion by dusk.

In response to the American tank raid on Djedeida airfield, on the morning of 26 November Oberst von Broich ordered a *Kampfgruppe* with the 4. Kompanie of Panzer-Abteilung 190 (13 tanks), a company of Witzig's engineers and a company from the T3 Marsch-Bataillon to advance south from Mateur to probe enemy forces in the Chouïgoui Pass sector. Panzer-Abteilung 190 was an inexperienced unit and it made the amateurish mistake of advancing without adequate forward security. Waters had deployed his battalion around the Chouïgoui Pass to respond to enemy advances from the east or the north; at this point, he had Major William R. Tuck's B Company in hull defilade positions parallel to the road the German column was using, while Major Carl Sigler's A Company lay south of the road as it turned into the Chouïgoui Pass. Just before noon, the German column advanced along the road straight into the American engagement area. The enemy spotted some of Major Sigler's vehicles, deployed in an olive grove, and opened fire at about 1,000 metres. Sigler had a platoon of M3 75mm GMCs, which responded with ineffectual HE rounds and then switched to smoke rounds to provide some concealment. It was immediately obvious that the German tanks, equipped with long 7.5cm KwK 40 guns, were greatly superior in terms of firepower compared to the 37mm M6 guns on the M3A1. Nevertheless, Major Sigler opted to advance toward the enemy tanks with his 12 M3A1s, hoping to use manoeuvre to get in close enough to inflict damage. In a brief action, six of Sigler's tanks were destroyed, most bursting into flames from the German high-velocity rounds. One of the American platoon leaders, Second Lieutenant Freeland A. Daubin, fired 18 rounds of 37mm against one German Pz IV without effect. Then the German tank smashed Daubin's tank, killing most of his crew. Reaching the safety of a nearby ditch, Daubin later commented that:

> A burning tank is a fearsome sight… Initially they belch long searing tongues of orange flame from every hatch. As the ammunition goes off, the hull is wracked by violent explosions and the turret spouts sparks like a Roman candle. Silver rivulets of molten aluminum from what had been the engine pour out and puddle on the ground. When this inferno subsides, the many gallons of lubricating oil in the power train and the hundreds of pounds of rubber on the tracks and bogey wheels will continue to burn for twenty-four hours, creating a dense column of black smoke that can be seen for miles.[29]

However, Tuck's Company B, unnoticed by the Germans, was now in the perfect position to engage the German tanks with flank shots at very close range. Tuck's M3A1s knocked out six Pz IV Ausf G and one Pz III; the rest of the German force retreated.[30] None of the German tanks were actually penetrated by the 37mm rounds, so none caught fire, but rather these tanks were immobilized by damage to tracks and running gear. At least one German Panzer officer was captured as a result of this action. The American tanks followed up the retreating Axis by capturing the farm which was still held by Witzig's Fallschirmjäger, but in the process, Major Sigler was killed by a hit on his turret. The US Army, in its first action against German tanks, had done surprisingly well, despite being equipped with inferior tanks and lacking meaningful support. The tank action at Chouïgoui Pass demonstrates that in tank versus tank combat, tactical dispositions tend to count more than technical characteristics.



The German Tiger I was intended as a heavy breakthrough tank and proved ill-suited to manoeuvre warfare in Tunisia. In particular, the limited off-road mobility of the Tiger in muddy field conditions led to heavy losses at Hunt's Gap. (© Osprey Publishing Ltd by Peter Sarson. From NVG 5 *Tiger 1 Heavy Tank 1942–45*)

Barlow's armoured raid on Djedeida airfield convinced Nehring that he needed to shorten the defensive perimeter around Bizerte and Tunis in order to reduce any further gaps that might be exploited by enemy armour. Thus, the Fallschirmjäger battalion at Medjez el Bab, despite being reinforced with some anti-tank guns, was ordered to blow up the bridge over the Medjerda River and evacuate the town on the night of 25–26 November. Next morning, in pouring rain, the town was occupied by the British 11th Infantry Brigade, along with M3 medium tanks from Lieutenant Colonel Hyman Bruss' 2-13 AR and C Company, 701st Tank Destroyer Battalion.[31] Along the northern coast route, the British 36th Infantry Brigade also advanced, with American tanks from E Company, 2-13 AR. On the morning of 27 November, a British infantry battalion (1 Bn East Surreys) from 11th Brigade occupied the town of Tébourba, which the Germans had also evacuated, and then pushed on to the village of Djedeida. Seeing the Axis withdrawals, the Allied commanders now anticipated a rapid descent upon Tunis. All of Oliver's CCB had reached Tunisia and the British 78th Infantry Division expected its third infantry brigade to reach the front soon. The hour of victory in Tunisia appeared within grasp.

In fact, appearances were deceiving, and even ULTRA signals intercepts did not reveal the full extent of the OKW and Commando Supremo's efforts to rapidly build up combat power in Tunisia. By 22 November, all of Panzer-Abteilung 190 had arrived in Tunisia and on 23 November the first three Tiger tanks from Major Hans-Georg Lüder's s.Pz.Abt. 501 arrived in Bizerte. It was decided to keep the handful of Tigers in Tunis until more of them arrived in theatre, but Panzer-Abteilung 190 had about 50 operational medium tanks which Nehring intended to use to repulse the Allied encroachments against the Axis bridgeheads. With the lead elements of 10. Panzer-Division just reaching Tunisia, the tactical balance was about to swing against Anderson's forces. Nehring decided to concentrate most of his armour in the Tébourba–Djedeida sector, which is where he expected the Allies to mount their main attack.

Despite the attention lavished on the Tiger tank both during the Second World War and afterwards, the 57-ton Pz VI Ausf E heavy tank was not very innovative; it had thick homogenous armour (RHA) – up to 100mm thick in front and 80mm on the sides – which was neither sloped nor face-hardened. While nearly impervious from the front, the Tiger was vulnerable to flank shots at ranges of 500 metres or less. The Maybach HL 210 P45 (6450-hp) was a gas-guzzler which still used petrol (a major factor in a theatre where fuel was almost always in short supply), while the Fiefel air cleaning system – intended to keep dust out of the engine – proved problematic in service. The complex interleaved wheel system used in the suspension also made it very time-consuming to replace a single damaged roadwheel. Of course, the Tiger's main advantage was its 8.8cm KwK 36 L/56 cannon and its TzF 9c telescopic sight. The Tiger I typically carried about 45 Panzergrenate 39 (PzGr 39) APBC-T rounds and about 45 Sprenggranate L/4.5 HE rounds. With a decent gunner, the Tiger had a very high probability of obtaining a first-round hit on a tank-size target at ranges up to 1,000 metres and was still very accurate at 2,000 metres or more. Thus, the Tiger was an excellent long-range anti-armour weapon system, but it lacked the tactical mobility to excel in manoeuvre warfare and was simply too fragile to operate effectively in an austere theatre with minimal maintenance support.

The British 1st Battalion East Surreys had barely settled into Djedeida when they were attacked by 17 tanks and some *Kradschützen* (motorcycle infantry) from Kampfgruppe Hudel (under Hauptmann Helmut Hudel) on the afternoon of 27 November. In a bruising action for both sides, Hudel's Panzers destroyed the entire supporting battery of eight 25-pounder guns, but eight of his own tanks were hit. The East Surreys retreated and called for help, which caused the Allies to send more reinforcements to the Tébourba sector, including two companies of Bruss' 2-13 AR. At 1300 hours on 28 November, the Allies mounted an attack toward Djedeida with two companies of Bruss' M3 medium tanks and one battalion of British infantry. However, the Allied attack had virtually no air or artillery support, and by this point the Germans had reinforced the sector with infantry and two platoons of 5cm anti-tank guns. The American tanks had to cross a wide stretch of open ground and when they attempted this, the lead platoon, under Lieutenant Charles L. Davis, was engaged by enemy anti-tank guns and all five M3 medium tanks were destroyed.[32] Bruss broke off the main attack but tried two small-scale flanking efforts which cost him further casualties. Once a few of the wounded tankers were retrieved, the American tanks withdrew. After regrouping and bringing up artillery to support the next push, Bruss made another attempt at dawn on 29 November, with one British infantry battalion and 12 M3 medium tanks.[33] Not only did intense German anti-tank fire immediately halt the Allied advance, but Luftwaffe Ju-87 Stukas repeatedly dive-bombed the American tanks. On 29 November, the Germans also halted the British 36th Infantry Brigade at Sedjenane, 38 kilometres west of Mateur. A cleverly placed ambush inflicted over 160 casualties on the lead British battalion and destroyed ten of its carriers, which the attached American armour company failed to prevent.

By 30 November, General Evelegh recognized that the race for Tunis had been lost and he suspended further attacks against Mateur and Djedeida until additional Allied forces could reach the front. Oliver's CCB was much diminished, having lost a number of tanks and crews. Noticeably, Hamilton-Russell's 17/21st Lancers had played only a minor role in the campaign up to this stage, in part due to the fact that much of their ammunition turned out to be water-damaged.[34] Unsurprisingly, the slow-moving Valentines proved ill-suited to manoeuvre warfare and had a tendency to get stuck in the thick Tunisian mud. Insufficient maintenance was also eating away at both the American and British tanks, with significant numbers sidelined with technical defects.[35] In contrast, the enemy now had a substantial armoured force in Tunisia, including medium tanks that were superior to most of the Allied tanks. Furthermore, Evelegh and Anderson recognized that Allied attacks were unlikely to succeed under conditions not only where the enemy enjoyed local air superiority, but where they could dive-bomb forward units with relative impunity. Consequently, Anderson agreed to suspend the offensive for several days. On the other side, Kesselring ordered Nehring to follow up on his defensive successes by conducting vigorous counterattacks, led by armour and Stukas, to push the Allied forces back from Bizerte and Tunis. In the span of just three weeks in November, the entire strategic situation in North Africa had radically altered and both sides were scrambling to take advantage of fleeting opportunities.

In early November, Generalleutnant Wolfgang Fischer's 10. Panzer-Division had been located in Amiens, France, where it had been training for the past seven months. The 10. Panzer-Division was a veteran formation, having been involved in intense fighting on the Eastern Front in 1941–42, but had suffered heavy losses and was sent to the West to rest and refit. By November 1942 the division was back to full strength, with a total of 155 tanks – indeed, it was one of the best-equipped Panzer-Divisionen in the Heer at this point in the war. Although an infantryman by training, Fischer had successfully commanded the 10. Panzer-Division since August 1941 and was a capable leader. When the OKW learned about the Anglo-American landings in French north-west Africa, the 10. Panzer-Division was immediately put on alert. However, the 10. Panzer-Division was first used to spearhead the occupation of Vichy-held southern France on 11 November (*Fall Anton*), moving 450 kilometres in just 21 hours.[36] Once in southern France, the 10. Panzer-Division began to fragment: one detachment was sent by rail to Naples to prepare for transfer to Tunis by sea, other detachments were preparing for transshipment and a large portion of the division was used to occupy Toulon on 27 November. On the night of 22/23 November, two companies of motorcycle infantry from Kradschützen-Bataillon 10 arrived by sea in Tunis – the first elements of 10. Panzer-Division to arrive in North Africa.

Generalleutnant Fischer arrived in Tunis on 23 November, without troops or a staff. On 28 November, a small convoy reached Tunis with the 2. and 3. Kompanien of Hauptmann Helmut Hudel's I./Pz.Regt 7. However, the port facilities were under regular air attack, so it took three days to unload the ships. A second convoy, with the 5. and 8. Kompanien of Hauptmann Burk's II./ Pz. Regt 7, was due to arrive on 3 December. Ideally, Fischer would have been allowed to assemble at least part of his division prior to committing it to combat, but Major Barlow's raid on Djedeida had stung Nehring into mounting a hasty counterattack. While his tanks were still unloading, Fischer was ordered by Nehring to lead a counterattack with all available units by 1 December and destroy the Allied forces around Tébourba. He quickly formed four *Kampfgruppen* for the counterattack:[37]

1. Kampfgruppe Hudel under Hauptmann Helmut Hudel, with his two *Panzer-Kompanien* (32 Pz III Ausf L), one battery of eight towed 7.5cm anti-tank guns and one *Kradschützen* company.
2. Kampfgruppe Lüder under Major Hans-Georg Lüder, with two *Panzer-Kompanien* (about 20 tanks) from Panzer-Abteilung 190, one battery of towed 10.5cm field guns and one *Kradschützen* company.
3. Kampfgruppe Koch under Oberstleutnant Walter Koch, with the two battalions from his FJR5, the T3 replacement battalion and some artillery and anti-tank guns.
4. Sicherungsgruppe Djedeida under Oberst Günsch, with elements of Hauptmann Nikolai von Nolde's 1./s.Pz.Abt. 501 (three Tiger tanks, numbered 11, 112, 132, and four Pz III Ausf N), one infantry company from the T1 replacement battalion and two 10.5cm field guns.

The attack was scheduled to start at 0745 hours on 1 December, with the main German effort being made from north to south in order to seize the Chouïgoui Pass, then push on to the Tébourba Gap. The Allied forces in the area were deployed in a rough triangle, with Waters' 1-1 AR holding

Chouïgoui, Bruss' 2-13 AR (D Company and one platoon of F Company, about 20 M3 Lee) holding Tébourba and Hamilton-Russell's 17/21st Lancers (14 Crusaders and 26 Valentines) at the Tébourba Gap. Three British infantry and one American artillery battalion were also in the area, but the Allied units were basically deployed in a loose zone defence. Around 0900 hours, Kampfgruppe Lüder appeared, advancing from the north, in *Breitkeil* formation. About 30 minutes later, Kampfgruppe Hudel (with Fischer accompanying) appeared from the north-east. Waters' 1-1 AR, with perhaps 40 operational M3A1 light tanks, was outnumbered and badly outgunned. Yet Waters succeeded in conducting a delaying action for about 30 minutes, before retreating pell-mell to the south. When Hamilton-Russell learned of the German attack coming from the north, he sent Major Charles Nix's B Squadron to occupy a blocking position, but they quickly came under fire from the advancing enemy tanks. Nix's squadron was still equipped with Crusader IIs with the 2-pounder gun, which were seriously outranged by the German tanks. After a lopsided action, five Crusaders were knocked out and the British tanks were forced to withdraw. Fischer followed up this success by nearly overrunning Blade Force's headquarters, but was briefly stymied by intense 25-pounder fire from C Battery 12 RHA.[38]

With Blade Force scattered by 1130 hours, Fischer moved quickly to try to crush the Allied forces in Tébourba with a concentric attack. Kampfgruppe Koch (with two Fallschirmjäger battalions) had managed to reach the outskirts of El Bathan from the south, but the British infantry battalion (1st East Surrey) held its ground. At 1300 hours, Hauptmann Nikolai von Nolde began advancing with his *Panzer-Kompanie* from an assembly area east of Djedeida; his first challenge was to get his 57-ton tanks over an old bridge on the Medjerda River. Even before leaving Tunis, one of his Tigers had fallen out with mechanical troubles, leaving him with three Tigers and four Pz IIIs.[39] Around 1500 hours, von Nolde's small detachment encountered stiff resistance from Lieutenant Colonel James M. Lee's 2nd Battalion Hampshire Regiment, which occupied a series of hills east of Tébourba. Although Lee's battalion had only occupied this position for less than 48 hours before the German attack, it was a well-led, regular army unit. Lee had also been reinforced with four 6-pounder anti-tank guns and eight 25-pounder guns, which gave his battalion a fair amount of firepower.[40] Unlike the terrain in Egypt or Libya, the terrain around Tébourba was more restrictive (hills, olive groves, a town and a 15-metre-wide river), which gave infantry a chance to hold off tank attacks. Furthermore, the artillery and automatic weapons fire from the Hampshires was sufficient to deter the attached infantry from following von Nolde's Tigers, thereby depriving the Germans of their usual advantage in combined arms tactics. As the three Tigers approached the British positions, one of the Tigers apparently suffered a mechanical issue and von Nolde dismounted to investigate. By chance, a 6-pounder shot took off both his legs, killing him. Oberleutnant Eberhard Deichmann took over and pressed the attack with the two remaining Tigers and some of the Pz IIIs. The M3 medium tanks (Lees) of Company D, 2-13 AR were concealed in some of

A US Army M3 medium tank crew from Bruss' 2-13 AR in Tunisia, late November 1942. American tank crews were generally proficient in driving, maintenance and gunnery, but weak on tactics. (Author's Collection)

the olive groves near Tébourba and engaged the German tanks when they approached. At point-blank range, the M3 Lees scored hits on both Tigers with 75mm armour-piercing rounds, but they failed to penetrate the thick armour plate. Then Deichmann's Tiger knocked out at least two of the M3 medium tanks and the rest withdrew. However, Deichmann was killed by sniper fire when he dismounted his tank. Having lost two officers and with another Tiger suffering mechanical problems, the German force withdrew (one Tiger remained on the battlefield).

Although Fischer's initial attack had not destroyed the Allied forces around Tébourba, Brigadier Edward E. Cass's 11th Infantry Brigade would be in serious trouble unless help arrived soon. Two groups of Allied tanks remained on the south-west side of Tébourba – 16 tanks from the 17/21st Lancers and about 15 M3 mediums from 2-13 AR – but none of these were much of a match for the German tanks. The one bright spot for the 11th Infantry Brigade was that Allied forces still held the Tébourba Gap and a tenuous supply route to the front-line positions. That evening, General Evelegh ordered Oliver's CCB to mount an attack the next day to regain contact with Cass's infantry in Tébourba. Unfortunately, CCB was very scattered by this point and Oliver decided to delegate the counterattack to Colonel Robinett, but apparently Robinett did not get this message until the next day. In the interim, the American tanks holding the Tébourba Gap decided on their own to mount a relief effort. Waters' 1-1 AR was played out, but Lieutenant Colonel John H. Todd's 1-13 AR (minus one company) was available with 30 M3A1 light tanks. In addition, Captain James P. Mayshark's E Company, 13 AR (which had been detached) arrived with its own 17 M3 Lees.

In addition to the Tiger tank, the German counterattack at Tébourba also introduced Allied troops to other new enemy weapons: the Henschel Hs 129 ground-attack aircraft and the Schwerer Panzerspähwagen (7.5cm) (Sd Kfz 233). In late November, the Luftwaffe flew the 5.(Pz.)/Schlachtgeschwader 1 into Tunis with about ten Hs 129 B-2 aircraft, which were armoured against ground fire and equipped with a 3cm cannon. Unlike the Ju-87 Stuka, which relied on dive-bombing, the Hs 129 was optimized for low-level strafing and could inflict serious damage upon the thin top armour of many tanks. Under the right circumstances, the Hs 129 could be highly effective in the ground-attack role. A detachment of the new Schwerer Panzerspähwagen (7.5cm) also arrived in Tunisia, which were the most heavily armed armoured cars at this point. The Germans decided to add a short 7.5cm howitzer to some of their Sd Kfz 233 armoured cars, which gave this 8.7-ton vehicle more firepower than some of the Allied tanks. Although only lightly armoured, these upgunned armoured cars combined speed and firepower and gave German reconnaissance units a significant edge against British Humber armoured cars and American White scout cars.

On the morning of 2 December, the American tankers in the Tébourba Gap began a series of poorly organized attempts to open a corridor to the defenders in Tébourba. First, Todd attacked with his own battalion around 0930 hours, but more than half his tanks were knocked out and the rest retreated. Two hours later, Major Henry Gardiner, executive officer of 2-13 AR, led Mayshark's company across the river valley without infantry or artillery support. The American medium tanks ran straight into Kampfgruppe Hudel, which proceeded to knock out eight M3s, including Major Gardiner's tank.[41] By the time that Robinett arrived, CCB's armour was much reduced, without achieving anything.[42] In the meantime, Fischer slowly closed in on the Allied force in Tébourba, but the lack of effective infantry support mandated a methodical approach.

After fending off American counterattacks, Kampfgruppe Hudel began encroaching on the road leading in to Tébourba, but British 25-pounder guns kept the German tanks at a distance; this action was recorded by US Army combat cameramen on the scene.[43] Fischer ordered Sicherungsgruppe Djedeida to try to reach Point 186 (Djebel Maïana), which was the key terrain north-east of Tébourba. Only one Tiger tank was still operational, along with three Pz III Ausf N, but Fischer added two Pz III Ausf L from Kampfgruppe Lüder, plus some infantry.[44] The combat was fought at close range, in the olive groves around the high ground. Six of Waters' M3A1 light tanks were destroyed, along with two halftracks and four 6-pounder guns, but three German Pz IIIs were knocked out and the German *Kampfgruppe* fell back. Instead, Fischer called in Ju-87 Stukas to dive-bomb the area around the town repeatedly. He also demanded infantry reinforcements in order to finish off the isolated Allied units in Tébourba, and the Luftwaffe obliged by flying in two companies from his Panzergrenadier-Regiment 86; the troops were immediately sent to join the ongoing battle.

On the morning of 3 December, Fischer launched a concentric attack against the Tébourba pocket, gradually squeezing it. While his two main armoured *Kampfgruppen* cut off escape to the west, the Djedeida group (with the two fresh *Panzergrenadier* companies) attacked at 1000 hours from the east and managed to capture Point 186, which compromised the Allied defence. With the enemy closing in, most of the remaining Allied troops conducted a costly breakout effort, hugging the Mejerda River, and escaped, but Lee's Hampshire battalion was left behind. At dusk, Lee personally led a breakout, with bayonets fixed, but less than one third of his men escaped (Lee was captured).[45] The next morning, Fischer's troops occupied the burning wreckage of Tébourba and reported their success to Nehring. Altogether, the Allies lost 55 tanks (mostly American) in the Battle of Tébourba and 1,076 prisoners. Blade Force was broken, the CCB 1st Armored Division was battered and two British infantry battalions had been virtually demolished. German losses were about ten medium tanks knocked out, but since they held the battlefield, they could be repaired. At modest cost, Fischer's counteroffensive had halted the Allied drive on Tunis and bought valuable time for the Axis to reinforce the Tunisian bridgehead.

Despite the nice tactical victory at Tébourba, Kesselring found Nehring to be too pessimistic (or realistic) about the situation in Tunisia and relieved him of command. Nehring recognized that the long-term outlook for the Axis in North Africa was bleak and preferred to fight a rear-guard action in order to save the retreating Deutsche Afrika Korps. Instead, Kesselring envisioned a protracted defence of the Tunisian bridgehead in order to keep Italy in the war. Thus, instead of Nehring's jury-rigged LXXXX Armeekorps headquarters, Kesselring requested that the OKW redesignate German forces in Tunisia as the 5. Panzerarmee. Generaloberst Hans-Jürgen von Arnim was appointed as commander of the new army, which barely numbered 12,000 German troops. The 53-year-old von Arnim was a Prussian infantryman with extensive experience in mechanized warfare, having successfully commanded both a *Panzer-Division* and a *Panzerkorps* on the Eastern Front. In particular, von Arnim had demonstrated great skill in handling multiple crises during the defence of the Rzhev salient. It is likely that Kesselring wanted a quiet, aggressive professional like von Arnim to lead the German forces in North Africa, rather than the emotional and intractable Rommel. Von Arnim was not brought to North Africa to lead an evacuation, but rather to conduct a very active defence.

Since only small numbers of troops from the 10. Panzer-Division were being flown into Tunis, Fischer decided to keep the pressure on CCB while it was still off-balance. Lieutenant Colonel William B. Kern's 1-6 Armored Infantry Battalion (AIB) had been assigned to defend Djebel El Guessa, south-west of Tébourba. Kern's battalion was a strong mechanized infantry unit, but it had limited anti-tank firepower and had no friendly units on either flank. At 0700 hours on 6 December, Fischer launched a two-pronged attack against Kern's vulnerable battalion, with Fallschirmjäger from FJR5 infiltrating through the hills against the American left flank, while 20 tanks from Kampfgruppe Hudel, three Tigers and the I./Pz.Gren.-Regt 86 approached from the east. A battery of five T19 motor carriages (105mm howitzers mounted on halftracks) supporting Kern's battalion tried to stop the German tanks but were quickly eliminated. During the fighting, one Tiger was disabled by a 75mm round that hit its final drive, apparently fired by an American M3 GMC.[46] Despite this lucky hit, the Americans had yet to learn that halftracks simply could not go toe-to-toe against tanks. Kern's battalion was left with only a handful of 37mm anti-tank guns, which were ineffective against the German Panzers – so he immediately requested support from Brigadier Oliver. At the CCB command post, near Medjez el Bab, Oliver ordered Todd's 1-13 AR and Bruss' 2-13 AR at 0800 hours to move to support Kern. Yet due to communications issues (or incompetence), nothing happened for five hours. In the interim, Kern's battalion was outflanked and one infantry company disrupted. When Bruss finally did begin to advance around 1300 hours, he foolishly divided his reduced battalion into two company-size columns (E, D) that operated beyond supporting distance of each other. Bruss had also received a platoon of five M4 medium tanks, transferred from G Company, 2-67 AR in Morocco, which he placed at the front of one column. The American advance was so slow that Fischer's troops had plenty of time to deploy their anti-tank guns to cover the approaches. When the 2-13 AR tanks obligingly drove into the enemy engagement area, without reconnaissance or support, they lost 18 tanks in about 20 minutes. All five M4 Sherman tanks were destroyed.[47] Todd's battalion did not even engage. Although Kern's battalion was not destroyed, it still suffered over 20 per cent casualties and CCB was further weakened. Afterwards, Oliver relieved the incompetent Bruss of command.[48] Amazingly, Bruss would later be given command of another tank battalion in Italy in 1943.

On the Allied side, Major General Charles W. Allfrey, commander of the British V Corps, had assumed tactical command of all Allied forces in Tunisia on 5 December, including Oliver's CCB. Anderson's 1st Army headquarters, located nearly 300 kilometres to the rear in Constantine, was still responsible for directing operational-level plans. Anderson, Allfrey and Evelegh all recognized that the race for Tunis had been lost and were inclined to passively wait for reinforcements until resuming offensive operations – although that meant giving the Axis a month-long respite. Allfrey even suggested evacuating Medjez el Bab – which was rejected by Eisenhower.[49] Other than abandoning the exposed Djebel El Guessa position, the British leaders made no other significant tactical alterations. Oliver's CCB was reinforced with another detachment of 21 M4 medium tanks from 2-67 AR on 9 December, but otherwise it only had 22 M3 mediums in Gardiner's 2-13 AR and 62 M3A1 light tanks (split between 1-1 AR and 1-13 AR).[50]

Fischer decided that the best defence was to keep on attacking, so he decided to hit CCB again on the morning of 10 December. However, the rainy weather was not cooperative and the rain-soaked ground was quite muddy. One German column, consisting of the II./Pz.Gren.Regt. 86 and 16 tanks, tried to force its way down through the Tébourba–Medjez el Bab road, but was stopped by British artillery and some American tanks. At 1045 hours, Fischer mounted a pincer attack with two *Kampfgruppen* (including two *Panzer-Kompanien* from Pz.Regt. 7 and two Tiger tanks, plus I./Pz. Gren. Regt. 86) against CCB positions on the Djebel Bou Aoukaz, a hill range just east of the Medjerda River. The Americans held this hilly area with Kern's 1-6 AIB and Lieutenant Colonel John R. McGinness' 2-6 AIB; a powerful force with about 2,000 troops, supported by a 105mm artillery battery and 2-13 AR. However, Oliver had failed to subordinate any of the tanks to the infantry battalions, which demonstrates one of the basic flaws in American tactical organization at this point in the war. Tanks and infantry operated under the same combat commander, but they reported to different regimental commanders (Robinett in the case of 13th Armored Regiment) and were not task organized under a single tactical commander – as the German Kampfgruppen did. Consequently, the level of tank-infantry coordination in CCB was relatively poor.

The initial German direct advance toward the Djebel Bou Aoukaz achieved little due to muddy terrain and strong defensive fire, but a flanking move to the south unnerved the Americans. Robinett sent Todd's 1-13 AR (Captain William H. Hatcher's A Company and part of B Company) and Captain Frank J. Redding's C Company, 701st Tank Destroyer Battalion (8 M3 GMC, 4 M6 GMC) southward to intercept the German flanking move, which pitted M3A1 light tanks and GMC against Pz III Ausf L medium tanks and the two Tigers. This brief action provided American tankers a taste of what the Tiger's 8.8cm KwK 36 gun could achieve in open terrain: 14 of Todd's' M3A1 light tanks were destroyed (plus five more by other German tanks).[51] Captain Hatcher's entire company was destroyed. Redding's tank destroyers claimed to have knocked out four Pz III tanks with 75mm fire, but lost at least four of their own GMCs. After fending off this feeble response, the German armoured column pushed to within 3 kilometres of Medjez el Bab but were stopped by French artillery fire, which knocked out three Pz III tanks. The German armoured attack received significant Luftwaffe close support; during the period 1–10 December, the single squadron (*Staffeln*) of Hs 129 aircraft flew about 30 sorties and claimed to have destroyed about 12 Allied tanks and armoured cars – without the loss of any of their own number.

With Medjez el Bab at risk, Allfrey ordered Robinett (Oliver was out of communications) to pull CCB back behind the Medjerda River, using the bridge at Bordj Toum. The withdrawal route was relatively short, along a 4-kilometre-long stretch of paved road, and a detachment was sent to guard the bridge. Kern pulled out part of his battalion during the afternoon, but the main body did not begin withdrawing until dusk, with Lieutenant Colonel McGinness in overall command. McGinness was a 45-year-old West Point infantry officer who had spent most of the interwar period at an obscure base in Ohio and would likely have remained there for the rest of his career had not the Second World War intervened. Now, on a dark rainy night in Tunisia, McGinness' poor leadership skills turned a relatively straightforward night retrograde movement into a complete soul-crushing fiasco. A report – which turned out to be false – claimed that the Germans had captured the bridge. Without verifying this information, McGinness made the snap decision to seek an alternative route to the south along a dirt track paralleling the river. The track proved to be a quagmire and over 130 vehicles and 18 tanks became stuck in a vast sea of cold mud. Panicking, McGinness ordered his troops to abandon the mired vehicles and retreat southward on foot. Although the American troops succeeded in reaching Medjez el Bab, they did so minus virtually all their heavy equipment and vehicles.[52] Oliver relieved McGinness of command, but now CCB was *hors de combat*, with only 49 tanks still operational.[53] The incident was so bizarre that it was reported all the way up the chain of command to the White House. Later, the Germans were able to recover enough abandoned American halftracks to equip an entire *Panzergrenadier Kompanie*.[54]

After this American debacle, both sides temporarily shifted to the defence in Tunisia. A period of heavy rains reduced ground mobility and air support. Axis efforts to bring more of the 10. Panzer-Division over proved problematic due to Allied interdiction efforts and the limited amount of Italian shipping available. A good portion of the II./Pz.Regt. 7 (33 tanks) was lost at sea when the freighter *Menes* was sunk on 3 December. Consequently, by Christmas Fischer still had assembled less than one-third of his division in Tunisia. On the Allied side, additional elements of 2nd Armored Division were transferred by rail from Morocco to Tunisia, including 26 M4 medium tanks to help restore CCB. However, most of the remaining tanks in CCB were mechanically worn out and at the end of a very long supply line stretching back to Algiers. Just as the fighting was winding down, Eisenhower sent Patton to investigate the poor performance of US tanks during the initial fighting in Tunisia. Patton spent time gathering after-action information from both Robinett and his son-in-law, Waters.[55] In particular, Robinett lamented that the American 75mm gun could only penetrate 88mm of armour at 900 metres, whereas the German 75mm guns could penetrate 100–150mm of armour at the same range.[56] In fact, the American M62/M72 AP rounds could only penetrate 45–60mm of RHA or FHA at 900 metres, whereas German 7.5cm Panzergrante 39 APBC rounds could penetrate 81mm at that range; Robinett's assessment was actually a bit grimmer than reality. The German tankers had a firepower edge, but it was not decisive.

There is little doubt that the combat debut of CCB against the German forces in Tunisia was less than auspicious. However, it is important to remember that US armored and tank destroyer units were committed with second-rate equipment and in a non-doctrinal manner (combat commands were intended to operate as part of an armoured division, not alone as independent brigades for months). Indeed, the neglect shown by Eisenhower's headquarters for ensuring that properly equipped troops were committed into combat in Tunisia is inexcusable. Focused on political factors, rather than mundane details like whether the tankers had the correct armour-piercing ammunition or infantrymen had the new Bazooka, the theatre command was oblivious to the facts that made mission accomplishment unlikely. Nor had the US Army prepared to fight under British command, in an austere theatre, with minimal air support. As Robinett noted, 'the mixing of small Allied units with their differences in organization, training, supply arrangements, communications, doctrine, and staff procedures caused a feeling of helplessness that was destructive to prompt and aggressive action'.[57] Had a single US armoured division, properly equipped with M4 medium tanks, been committed to Tunisia, under a commander well versed in manoeuvre warfare, Fischer's improvised *Kampfgruppen* would likely have been roundly defeated at the Battle of Tébourba. Instead of fighting as a concentrated combat command, Oliver's CCB was repeatedly forced to fight as dispersed companies and battalions.

Yet despite all these handicaps, at the tactical level, most US armoured units fought with determination and valour in Tunisia, if not always with skill. Equipped with thin-skinned M3A1 light tanks and the clumsy M3 Lee medium tank, American tankers were still eager and willing to engage the better-armed German tanks, which were often manned by veteran crews. American tactical command and control at this point was often faulty, but no worse than how British armoured units had behaved around Sidi Rezegh in November 1941. The German units that fought at Tébourba regarded American tank gunnery as quite accurate, scoring many hits, although very few penetrations. American tankers had been well trained in tactical driving and gunnery, but were deficient in tactics above platoon or company level. Unlike British or German tankers, who preferred to fire from hull-down positions, American tankers were apt to ignore the value of micro-terrain features to gain some cover and concealment. Lack of pre-battle reconnaissance was also a significant deficiency, which led to unnecessary casualties.

As for the Germans, their ability to quickly organize combat effective *Kampfgruppen* was phenomenal. Unlike many of Rommel's tanks in 1941–42, the German AFVs in Tunisia were often the newest models, which often gave them a qualitative edge beyond their modest numbers. The appearance of the Pz VI Tiger Ausf E was a particularly nasty surprise for Allied tankers, since its firepower and level of armoured protection far exceeded the capabilities of the M3 and M4 medium tanks. On a good day, one or two Tigers could cause Allied tanks real trouble. Nevertheless, the introduction of the Tiger tank to the North African theatre was a major mistake, since these vehicles required a great deal of logistic support that could not be reliably provided in this austere theatre. The s.Pz.Abt. 501 arrived piecemeal and without a *Werkstatt Kompanie*. The early Tiger Ausf E model was a very finicky vehicle, prone to breakdowns if moved too far or too fast on its own tracks, which made it poorly suited for manoeuvre warfare. If damaged or broken down, battlefield recovery of 57-ton heavy tanks in Tunisia was very difficult, given the limited number of heavy tracked vehicles. Consequently, the risk that damaged Tigers would fall into Allied hands was significant, which would lead to the Allies improving their own anti-tank capabilities. Indeed, Britain had already begun low-rate production of the new 17-pounder anti-tank gun, and as soon as the Tiger appeared in North Africa, 100 of these guns were dispatched to join 1st Army. In the long run, there were simply too few Tigers in Tunisia to really matter, and it was rare for more than one or two platoons of them to be available for operations at any one time.

STALEMATE IN TUNISIA: DECEMBER 1942–JANUARY 1943

'Don't lose your head; being jittery in battle ruins a lot of communications. Keep your head – main thing. Don't button up your tank or you can't see anything.'

Sergeant Becker, G Company, 3-1 AR[58]

While Fischer was defeating the Anglo-American vanguard in Tunisia, the remnants of Rommel's once-proud Panzerarmee Afrika were nearly 1,200 kilometres to the south-east, huddled around Mersa Brega. Montgomery's 8th Army had virtually halted its pursuit after taking Benghazi and focused on improving its supply lines. Even after two weeks, Montgomery could only support three divisions at the front in Libya (7th Armoured Division, 2nd New Zealand Division and 51st Highland) under Leese's XXX Corps. Consequently, the 8th Army's pursuit only included a single armoured formation – Harding's relatively intact 7th Armoured Division (with 8th Armoured Brigade and 4th Light Armoured Brigade), which possessed fewer than 200 tanks. Montgomery also used the brief operational pause to conduct some house-cleaning; he relieved Lumsden as commander of X Corps and replaced him with his protégé, Horrocks. Gatehouse was relieved as commander of the 10th Armoured Division and the division was reduced to the role of a training formation. The 8th Armoured Division, which had already been picked clean of personnel and equipment prior to El Alamein, was disbanded. Briggs was left in command of the 1st Armoured Division, but his division was not involved in the pursuit and was left to refit in Egypt. Indeed, many British armoured personnel were afforded time to rest in Alexandria, while their units received new or repaired tanks.

Rommel had established a defensive position anchored at Mersa Brega on the coast road, which extended 25 kilometres inland to Bir es Suera. A second line of defence was formed at El Agheila, with its right flank resting on the inland salt marshes. Although the Axis were able to deploy some anti-tank mines, these positions were little more than hasty defences and Rommel lacked

The Valentine Mark IX, equipped with a 6-pounder gun, entered service in late 1942. The Mk IX had its combat debut with Blade Force in Tunisia, but its augmented firepower came at the cost of a cramped turret. (IWM, E22975)

the troops to conduct a linear defence, or the fuel to conduct a mobile defence. While his supply lines to Tripoli were much shorter, fuel was still an issue due to Allied interdiction efforts and now he had to compete with 5. Panzerarmee in Tunisia for resources. Likewise, Rommel had received a few replacements, but he still could only muster a total of about 60 operational German tanks by early December.[59] Both 15. and 21. Panzer-Divisionen were reduced to regimental-size *Kampfgruppen* and their troops were exhausted, with no hope of rest.

The Italian survivors of El Alamein were in even worse shape. Generale di Divisione Gaetano Cantaluppi began forming the remnants of the XX Corps into the mixed Raggruppamento Cantaluppi. The 'Centauro' division, which arrived piecemeal in North Africa, also contributed the Gruppo di Combattimento 'Centauro', which included Tenente Colonnello Tommaso Bottiglieri's XV Btgl. Carri M. and Tenente Colonnello Cesare Lasagna's XVII Btgl. Carri M.[60] Altogether, the Italian forces in the El Agheila sector had 42 medium tanks, 15 Semovente and 19 AB40/41 armoured cars. Most of the Italian infantry had been lost at El Alamein and that which remained in Libya consisted of line of communications troops that were not well suited for front-line combat duties. Morale was also becoming an issue for Italian troops, since it was clear that the DAK was a spent force and that defeat in North Africa was increasingly likely.

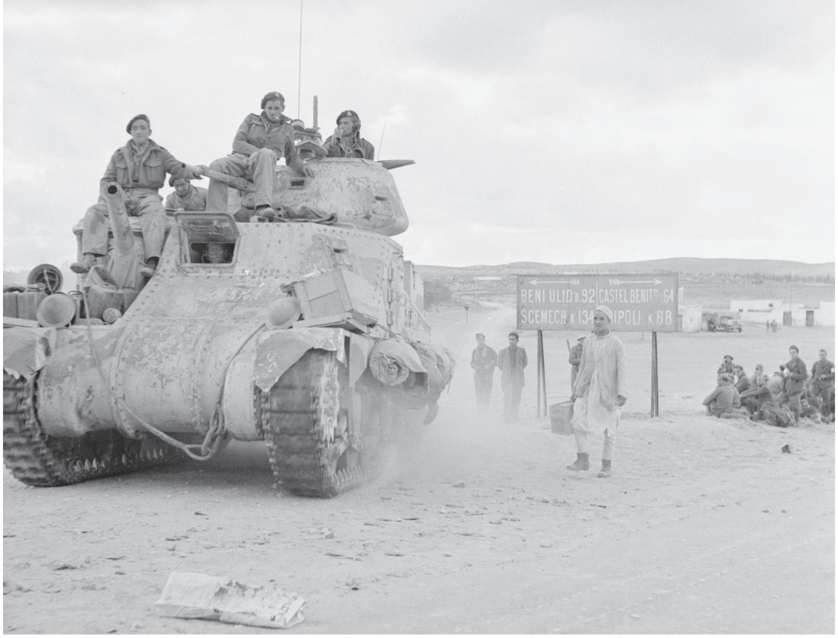
Montgomery came up with a relatively simple plan to 'annihilate' Rommel in his Mersa Brega/El Agheila positions. Brigadier Charles B. Harvey's 4th Light Armoured Brigade (1 KDG, 1 Royal Dragoons, RSG) had been detached from Harding's 7th Armoured Division and assigned to Freyberg's 2nd New Zealand Division; the brigade was mostly comprised of armoured cars, but the RSG had 30 Sherman tanks. Freyberg's division was provided with five loads of fuel and enough water for ten days, in order that it could make a wide envelopment through the desert, well south of Rommel's positions. Once Freyberg had got around behind Mersa Brega, the rest of 7th Armoured Division and two brigades from the 51st Highland Division would mount a frontal assault on the Axis positions. Freyberg began his enveloping manoeuvre on 11 December and made good progress. However, Axis aerial reconnaissance detected the envelopment and Rommel quickly pulled his most forward units back to El Agheila.[61] By the time that 7th Armoured Division began its advance, the Axis rearguard had already evacuated Mersa Brega. The 'Centauro' battlegroup made a brief stand at El Agheila against the British 8th Armoured Brigade on the morning of 15 December, but 3 RTR knocked out seven M14/41 tanks and one Pz III.[62] Freyberg's division moved very quickly, but when it reached the coast near the Arco dei Fileni (Marble Arch) on the night of 15/16 December, the 21. Panzer-Division was already there. The Axis forces escaped the trap and continued retreating 360 kilometres to Buerat, where Rommel intended to halt.

By 19 December, Pz.Regt. 5 possessed 18 AFVs (including nine Pz III Ausf J/L, five Pz IV Ausf E, four Pz IV Ausf G) and was reorganized as a single battalion, with two companies.[63] Pz.Regt. 8 was even weaker, with just 14 tanks (two Pz III Ausf L, eight Pz III Ausf N and four Pz IV Ausf G). The 21. Panzer-Division suffered a major loss on 21 December when its commander, Generalmajor Heinz von Randow, and his operations officer were killed when their vehicle ran over a mine. Von Randow was the fourth German *Panzer-Division* commander to be killed in 1941–42, indicating the risks of the forward command style.

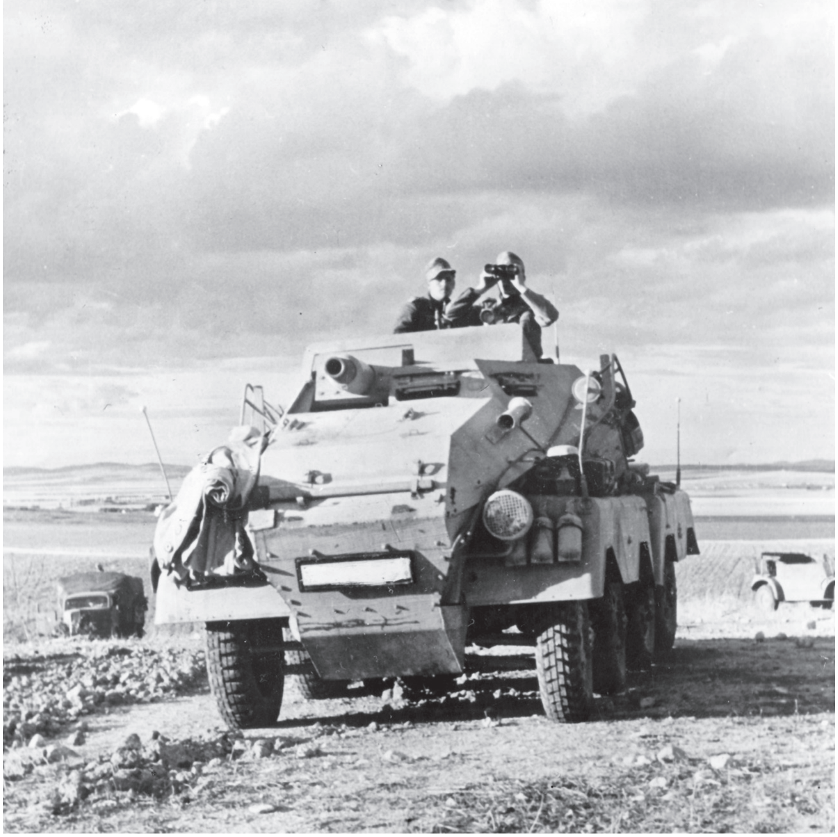
British infantry advance with American M3 light tanks, Tunisia, December 1942. Initial attempts to conduct Allied joint operations were poorly coordinated and often resulted in failure and frustration. (Author's Collection)

Once again, Montgomery was forced to halt his pursuit in order to bring up more supplies and shift his air support forward. German *Pioniertruppen* had littered the Via Balbia with minefields – both fake and real – which needed to be cleared. Rommel was given another three weeks to rest his tired forces. Buerat lay 290 kilometres south-east of Tripoli and the terrain favoured the defence, thanks to the presence of large salt marshes in the area and an anti-tank ditch that had been dug. However, the position could still be outflanked. Furthermore, Rommel was getting very little fuel and ammunition because Tripoli was now under regular air attack and few ships were getting through. Rommel's willingness to withdraw from positions without fighting also ruined his relationship with his superiors, Bastico and Kesselring, who no longer trusted him. Indeed, the Italians wanted Rommel removed from command, and every step back he took strengthened their case. By early January, Commando Supremo was pushing Rommel to transfer some of the DAK to reinforce the Axis position in southern Tunisia, which he resisted for a while. Nevertheless, he was ordered to transfer the 21. Panzer-Division to von Arnim's command. After dragging his feet for as long as he could, a petulant Rommel finally released the division, but instructed it to leave its best equipment with the 15. Panzer-Division.

Montgomery's forces could only advance slowly westward along the Via Balbia due to mines and supply problems, which meant that the spearheads were often just armoured car units like the 11th Hussars. Indeed, the 8th Army advance in late December 1942 can only be described as leisurely, with 11th Hussars moving about 120 kilometres in ten days. Kesselring urged Rommel to strike at these light units and inflict a setback on Montgomery's pursuit, but he refused. Nevertheless, by 7 January 1943 Montgomery was already planning an attack on the Buerat position with Leese's XXX Corps. The basic plan was the same: push along the road with two infantry divisions while 7th Armoured Division and the New Zealanders tried to outflank Rommel's army. Leese built up a ridiculously large enveloping force – with roughly 6,000 vehicles – which made it relatively slow and easy to detect. Once again, Rommel avoided the blow by withdrawing from the Buerat position on the night of 15/16 January, relying upon mines and demolitions to slow the Allied forces. Rommel's rearguard now consisted primarily of the 15. Panzer-Division and 90. leichte Division, with some Italian battlegroups. After a very brief stop near Tarhuna, on 19 December Rommel issued an order to demolish the port of Tunis and for the DAK to retreat toward the Tunisian border. The Commando Supremo was apoplectic that Rommel would make no effort to defend Tripoli and make decisions of strategic importance without consulting his superiors in Rome or Berlin. On the morning of 23 January 1943, B Squadron, 11th Hussars entered Tripoli unopposed.[64] Three days later, Rommel retreated into Tunisia, which brought the campaign in Libya to a close. Just prior to the evacuation of Tripoli, the 21. Panzer-Division reached southern Tunisia on 17 January. Von Arnim had earmarked a shipment of 30 new Pz III Ausf L, just arrived in Bizerte, to replenish the division.[65]


BENI ULID K.92
CASTEL BENITO 64
SCEMECH K 134
IPOLI K 88

A very relaxed crew aboard a hard-used Grant, two days after the capture of Libya. Once Tripoli was in Allied hands, the British pursuit of the Afrika Korps slowed to a crawl. (IWM, E21568)



A number of the new Schwerer Panzerspahwagen were sent to Tunisia in late 1942. In order to augment the firepower in their reconnaissance units, the Germans mounted a short 7.5cm L/24 cannon atop an '8-rad' (eight-wheeled) armoured car hull. (SDZ, 02899316)

Rommel had led the longest retreat in German military history – over 1,700 kilometres – and at no point in the retreat did he turn to fight his pursuers, even though often there were just a few squadrons of armoured cars hovering behind his rearguard. Nor was he done retreating, since after abandoning Tripoli, he continued retreating another 330 kilometres to the Mareth Line in south-east Tunisia. Even with his limited resources, there is little doubt that Rommel had the means to defeat the 11th Hussars and a few spearhead units, but he did not even try – which was detrimental to the morale of his own troops. Had Rommel actually covered his mine obstacles with fire and destroyed a few vanguard companies, the cautious Montgomery would likely have further slowed down the pace of his already stately advance. Having been defeated at El Alamein, Rommel's only mission became to delay the enemy for as long as possible, which he emotionally rejected. Only the memory of Rommel's victories in 1941–42 saved him from being immediately sacked during the retreat, but his days as a darling of the Nazi propaganda machine were over. Furthermore, Hitler was no longer willing to overlook Rommel's repeated disobedience and left it up to the Commando Supremo to dispose of him. At noon on 26 January, just after entering Tunisia, Rommel received a signal from Rome that he was being replaced by Generale Giovanni Messe in about a week, with the exact date to be determined by the two officers.[66]

By the time that his forces entered southern Tunisia, Rommel was left with about 75,000 troops (including 30,000 Germans). The DAK consisted of the 15. Panzer-Division, 90. leichte Division and 164. leichte Division, with a total of about 60 operational tanks, 30–40 anti-tank guns and fewer than 20 artillery pieces. The Italian forces consisted of four infantry divisions ('Pistoia', 'La Spezia', 'Trieste', 'Giovani Fascisti') and part of the 'Centauro' division; the first two infantry divisions had been guarding lines of communications and were essentially intact. Although generally equipped with obsolete equipment, the Italian divisions still possessed most of their artillery and anti-tank guns, unlike the DAK units.

In northern Tunisia, Alexander had been prodded by Eisenhower to keep the pressure on von Arnim, which only resulted in a disastrous attack by two Allied infantry battalions against Longstop Hill on 22–24 December. A *Panzergrenadier-Bataillon* from 10. Panzer-Division managed to retain control over part of the hill, and a counterattack by the I./Pz.Regt. 7 with ten tanks on Christmas morning threw the Allied infantrymen back in disorder, with heavy casualties. By Christmas, Fischer had received most of his tanks (totalling about 80 Pz III and a few Pz IV), more artillery and his *Pionier-Bataillon*, but 10. Panzer-Division was still far from complete. Major Lüder's s.Pz.Abt. 501 possessed 12 Tiger I heavy tanks and 16 Pz III Ausf N, providing the 5. Panzerarmee with a powerful tactical reserve. Von Arnim was determined to conduct an active defence and strike at the Allies whenever an opportunity arose. On 28 December, the Germans mounted a local operation against the French XIX Corps and the British requested that Lieutenant Colonel John H. Todd send a company from his 1-13 AR to assist the French. Todd accompanied

C Company, 1-13 AR into action, but was killed when hit in the head by a shell. Three American M3A1 light tanks were also knocked out in the brief engagement.[67]

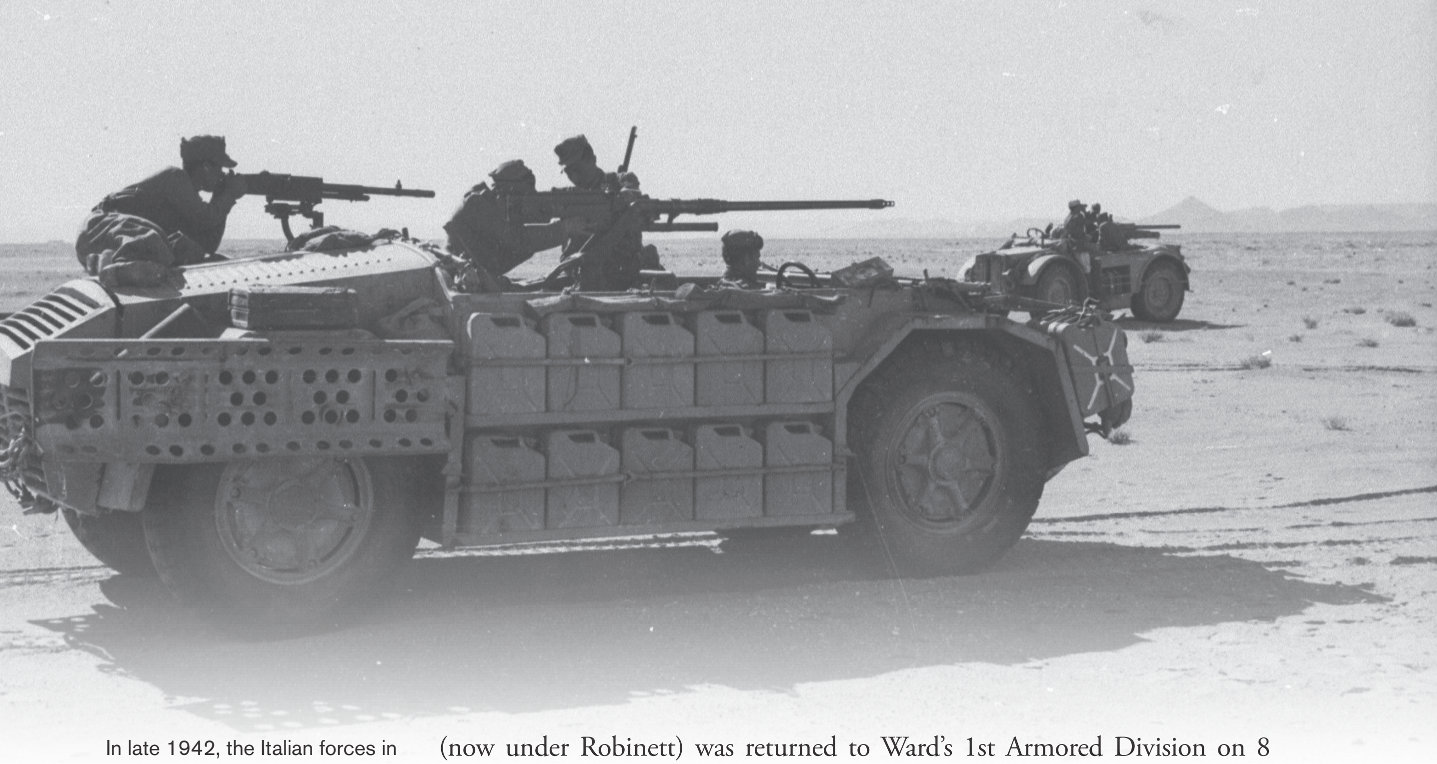
Eisenhower provided no practical guidance, orders or direction to Anderson's 1st Army in December, other than terminating the obviously failed direct advance on Tunis. Instead, Eisenhower was enmeshed with inter-Allied political issues; the idea of joint operations with British and French units was still plagued by doubts and misunderstandings. Fredendall's II Corps spent all of December in Oran, in garrison mode, aside from detaching CCB, 1st Armored Division and one regimental combat team (RCT) from the 1st Infantry Division to support Anderson's 1st Army (totalling about 11,800 personnel). The situation with the French troops (the XIX Corps had been formed in late December) in Tunisia, now having joined the Allied cause, was even more ambiguous. General Marie-Louis Koëltz, commander of the XIX Corps, had managed to form three small divisions to hold key mountain passes in central Tunisia, but he desperately needed modern equipment to re-equip his forces. Both the Americans and British agreed to provide the French troops with anti-tank guns, artillery and tanks, although this military aid took time to deliver.[68] Unity of command is one of the basic principles of war and Eisenhower, who was more of a spectator than a theatre commander, allowed the Tunisian campaign to be conducted with very ramshackle command and control arrangements.

While the bulk of the US II Corps was sitting in Oran, the British were moving additional forces into Tunisia in late December and early January, including Major General Charles Keightley's 6th Armoured Division and the lead elements of the 46th Infantry Division. The 6th Armoured Division had been a Territorial Army (TA) formation established in England in late 1940 and which was gradually trained and outfitted with equipment in 1941–42. The division's main combat strength lay in Brigadier Charles A. L. Dunphie's

A US M3 Medium tank named 'Barbarian' has come to grief in uneven terrain. Incidents of this sort were more likely to occur during night movements. (Author's Collection)

26th Armoured Brigade (16th/5th Lancers, 17th/21st Lancers and 2nd Lothian and Border Horse) and the 38th (Irish) Infantry Brigade. Overall, the division had three armoured regiments with about 180 tanks (90 Valentines, 72 Crusader II/III and 18 Crusader CS), one reconnaissance battalion with armoured cars (1st Derbyshire Yeomanry), four infantry battalions, two towed 25-pounder artillery battalions and an anti-tank regiment. About 50 of the Crusaders and 18 of the Valentines were equipped with 6-pounder guns, the rest with the ineffective 2-pounder gun. In other words, the 6th Armoured Division was a second-line formation, lacking in combat experience, which was partly equipped with obsolescent tanks. One of the few saving graces was that Major General Keightley was an experienced cavalry officer who had served briefly with the Mobile Force in Egypt in 1939 and then the BEF in France in 1940. On 26 December, the lead elements of Keightley's 6th Armoured Division went into the line near Bou Arada, 34 kilometres south of Medjez el Bab. Another British TA armoured formation in England was also being prepared for deployment to Tunisia, Brigadier Richard H. Maxwell's 25th Army Tank Brigade, equipped with the new Churchill infantry tank; this brigade would arrive in Algiers on 1 February.

Meanwhile, Major General Orlando Ward's 1st Armored Division staff, mostly unemployed in Oran, were examining how the rest of their formation might contribute to the Tunisian campaign. Indeed, the US Armored Force was eager to demonstrate its capabilities in combat, and CCB's participation in 1st Army operations had been far from satisfying. In late December, Ward's staff began pulling together an operational plan that would mass the entire 1st Armored Division in order to make a decisive strike against the enemy's lines of communication. The concept would require the 1st Armored Division and other II Corps elements to advance into southern Tunisia and occupy the road junction at Gafsa. From there, the 1st Armored Division could send one combat command 140 kilometres south-east to seize Gabès, while another combat command advanced due east through the Maknassy Pass to seize the minor port of Sfax. If successful, Rommel's forces at Mareth would be isolated and put out of supply; this was the kind of bold, aggressive manoeuvre that interwar tank theorists had envisioned.[69] The concept was refined into Operation *Satin*, a plan for the first major US ground offensive in North Africa. However, General Sir Alan Brooke, the British CIGS, did not like Operation *Satin* and referred to it as a 'ridiculous plan' in his diary.[70] Brooke rightfully pointed out that the 1st Armored Division would be inserting itself in between two Axis armies, with its flanks open on both sides, making it a ripe target for an enemy counterstrike. Yet Brooke was also concerned that any unilateral American success in cutting off Rommel's army would highlight Montgomery's inability to cut off the Afrika Korps retreat, and Montgomery was Brooke's protégé. Eisenhower tentatively approved Operation *Satin* in early January, but it was clear that the British were not on board with the concept. In anticipation of the operation, Fredendall moved his main headquarters forward to Tébessa (near the Algerian-Tunisian border) and CCB



In late 1942, the Italian forces in North Africa began receiving AS.42 reconnaissance vehicles, which were optimized for desert warfare. The AS.42 was highly mobile, possessed excellent range and had adequate firepower for its mission. (Author's Collection)

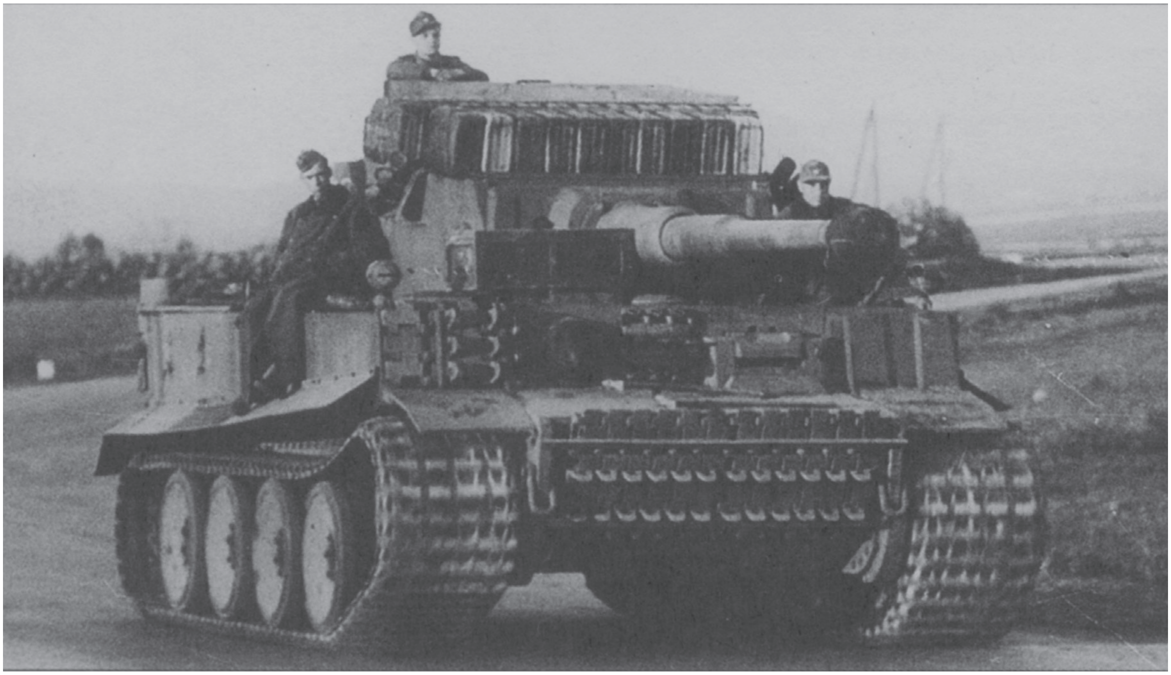
(now under Robinett) was returned to Ward's 1st Armored Division on 8 January and moved to Sbeitla (where it could also support the French XIX Corps, if necessary).[71]

The Italians were responsible for the defence of southern Tunisia and they had been quick to notice the potential for Allied forces to move through the Maknassy Pass to seize Sfax in a *coup de main*. The L Brigata Speciale (50th Special Brigade), including the XV Btgl. Carri M., DLVII Semoventi group, one infantry battalion and three artillery battalions, moved west to occupy the Maknassy Pass and El Guettar on 10 December. The Italians also wanted to seize Gafsa, but the French XIX Corps managed to hold the town with help from American tank destroyers.[72]

Provided negligible guidance by Eisenhower, Anderson decided to conduct some limited attacks in order to harass the Axis build-up in Tunisia. Blocked on the direct approach to Tunis and Bizerte, Anderson decided to shift his line of operations toward the south-east, into the mountainous Western Dorsal region. As soon as Keightley's 6th Armoured Division joined Allfrey's V Corps, Anderson assigned this untried unit to his extreme right flank, adjoining the French XIX Corps. Between 11 and 13 January, the 38th (Irish) Infantry Brigade from the 6th Armoured Division conducted two battalion-size attacks, supported by a few tanks from the 26th Armoured Brigade, but failed to eject German troops from a hilltop position north-east of Bou Arada. Further south, the French XIX Corps managed to achieve some success against the Italian 'Superga' division near the Karachoum Gap. Annoyed by this Allied activity, von Arnim decided to conduct a limited spoiling attack in order to push the British and French back and gain some useful defensive terrain. Von Arnim's staff developed a two-phased plan, *Unternehmen Eilbote* (Operation *Special Delivery*), which would strike at Bou Arada, near the boundary of the British V Corps and the French XIX Corps. Kampfgruppe Weber was formed to conduct the main attack against the French, using elements of the newly arrived 334. Infanterie-Division (three mountain infantry battalions, two artillery batteries) and Major Lüder's s.Pz.Abt.501 (12 Tigers, 18 Pz III).[73] A second group, Kampfgruppe Koch, with part of FJR5 and a *Marsch-Bataillon*, were ordered to mount a diversionary attack against the Irish Brigade at Bou Arada. Fischer's 10. Panzer-Division was directed to transfer three *Panzer-Kompanien* from Pz.Regt. 7, one *Panzergrenadier-Bataillon* and a *Pionier-Bataillon* to reinforce Kampfgruppe Koch.[74]

At 0700 hours on 18 January 1943, Kampfgruppe Koch (with about 30 tanks) attacked two infantry battalions of the Irish Brigade, supported by Hs-129 ground attack aircraft and Ju-87 Stukas. The German armour attacked in two columns across the open plain, but were stopped by a combination of artillery, anti-tank fire and mines; the British claimed six German tanks destroyed. One German tank column, approaching Bou Arada from the east, was engaged over open sights by the 25-pounders of the 17th Field Regiment, RA. Although the 26th Armoured Brigade was kept in reserve most of the day, part of Lieutenant Colonel Desmond O'Brien E. Ffrench-Blake's 2nd Lothians and Border Horse (2L&BH) was committed late in the afternoon. However, the thin-skinned Crusader tanks suffered heavy losses in a brief action against Pz.Regt. 7, then withdrew.[75] Further south, Kampfgruppe Weber made the main attack against French units near the Kebir Reservoir. The French, reinforced with a company from the American 601st Tank Destroyer Battalion, put up intense resistance. Due to the hilly and restrictive nature of the terrain, the German armour (including five Tigers from 1./s.

A German soldier walks past a wrecked American M3 medium tank in Tunisia, late December 1942. Note the two large shell penetrations on the front hull of the M3. (SDZ, 02900555)



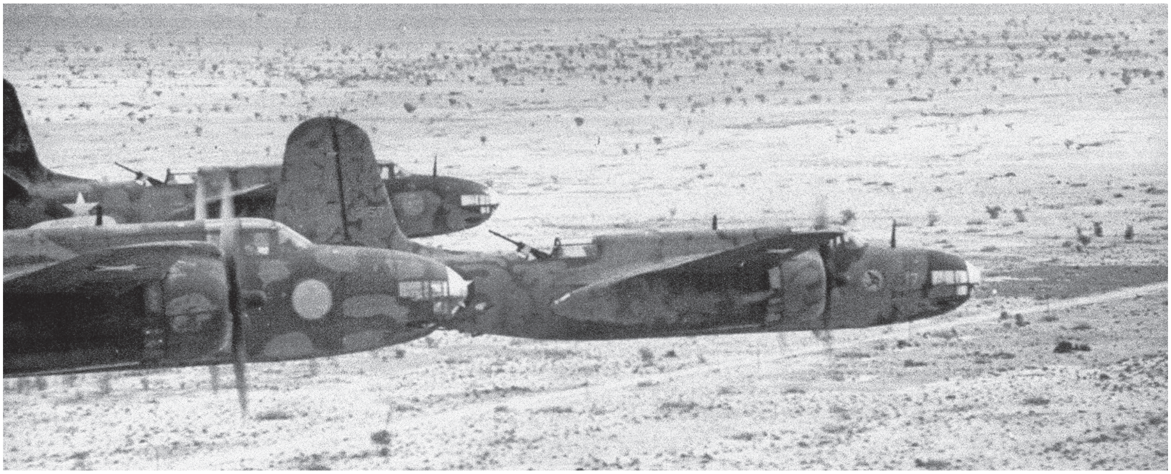
The first three Tiger tanks arrived in Bizerte on 23 November. Here, Tiger 241 conducts a road march, loaded with plenty of extra fuel canisters. (Author's Collection)

Pz.Abt. 501) were obliged to attack single file down a dirt road with vegetation on either side, which 'canalized' them straight into the French-American engagement area. Eventually the Allied defenders pulled back, but Tiger 132 was damaged by mines and there were no repair parts for it in North Africa; the Germans were soon cannibalizing this immobilized vehicle to provide spares for other battle-damaged Tigers.

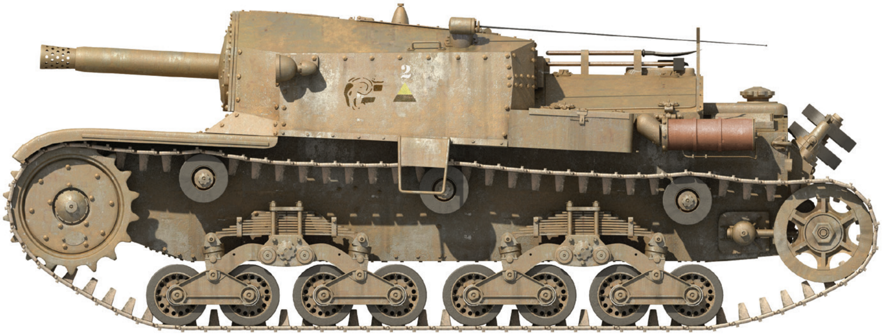
After breaking through the French, Kampfgruppe Weber continued its attacks on 19–20 January, first pushing south-west toward Robaa and then shifting Lüder's Panzers southwards to El Glib. The French were hard pressed, losing 3,400 troops captured, and asked for support from Robinette's CCB at Sbeitla. CCB was assigned to French command (which proved problematic, since the French lacked radios) and rushed forward during the night of 20/21 January to prevent the German armour from reaching Ousseltia. The German *Kampfgruppen* used their tanks, moving slowly down the road, with *Pioniers* in halftracks to clear mines. Whenever resistance was encountered, the column deployed its infantry to outflank the roadblock while the tanks laid down suppressive fire. At one point, on 21 January, the lead Tiger tank in a column was engaged by American M3 GMCs from the 601st Tank Destroyer Battalion; two 75mm rounds hit the Tiger's frontal armour but did not penetrate. Nevertheless, the shock effect of the direct hits in rapid succession 'rang the bell' of the Tiger crew, leaving them momentarily stunned, which allowed most of the GMCs to escape.[76] During these delaying actions, the 601st Tank Destroyer Battalion engaged German tanks on several occasions, suffering five dead and 19 captured.[77]

Robinett's CCB mounted a counterattack in the Ousseltia Valley on the afternoon of 21 January, using Gardiner's 2-13 AR (one company had M4 medium tanks), 2-6 AIB, one company of the 601st Tank Destroyer Battalion, a company of engineers and one artillery battalion. Robinett's counterattack was also supported by A-20 light bombers flying close air support sorties – this was the first American combined arms attack of the Second World War. The attack went fairly well and continued over the next day, resulting in small-scale actions that cost CCB three tanks and some halftracks (total personnel losses were five killed, 54 wounded and 25 missing).[78] Thanks to the efforts of CCB, Kampfgruppe Lüder was unable to demolish the French forces in this sector – which was the primary mission of the armoured attack. On 22 January, s. Pz.Abt.501 suffered its first *Totalausfälle* when a Tiger was hit by artillery on one of its rear roadwheels, leading to the rupture of a fuel tank and a fire, which burned out the tank. By the night of 22/23 January von Arnim judged that he had achieved his objectives and recognized that the arrival of CCB and a regimental combat team from the American 1st Infantry Division indicated that Ousseltia was now too well defended to seize with a limited attack, so he terminated the operation. Altogether, *Unternehmen Eilbote* claimed to have destroyed 24 Allied tanks and 27 anti-tank guns, while CCB claimed to have destroyed six Pz III and three Pz IV tanks, plus eight 8.8cm guns.[79] Although *Eilbote* was essentially a series of battalion-size tactical actions, it was significant in accelerating the movement of Fredendall's II Corps into south-central Tunisia to prevent a French collapse.

Despite Operation *Satin* being put on hold, Fredendall was keen to move the bulk of Ward's 1st Armored Division into the Gafsa sector to begin harassing the enemy. Ward wanted to use Brigadier General Raymond E. McQuillin's untried Combat Command A to seize Maknassy Pass (with an eye to making *Satin* feasible), but Fredendall decided instead to send an improvised Combat Command C (with a single company of M3A1 light tanks and some mechanized infantry) on a raid to Sened Station on the night of 24/25 January.



A formation of US Army Air Corps A-20 Havocs. By spring 1943 Allied airpower had become a dominant force over the Tunisian battlefield, which relentlessly pounded German armoured concentrations. (Author's Collection)



An Italian Semovente da 75/18 self-propelled gun, 'Ariete' division, May 1942. The Semovente was the most successful Italian AFV in North Africa. (© Osprey Publishing Ltd by Richard Chasemore. From NVG 195 *Italian Medium Tanks 1939–45*)

The raid was a success, inflicting nearly 200 casualties on the Italian garrison at the cost of two tanks damaged. Exaggerating the success achieved by this minor raid, Fredendall set his sights on re-capturing the Maknassy Pass, but he decided to wait another week before attempting it. In the interim, von Arnim recognized the American threat developing in southern Tunisia and he organized another spoiling attack, *Eilbote II*, to capture the Faïd Pass (which the French had been holding since 3 December) and push US forces back from the Maknassy Pass. Von Arnim decided to use Oberst Hans Georg Hildebrandt's 21. Panzer-Division and the Italian L Brigata Speciale in the Faïd Pass sector (with I./Pz.Regt. 5 and two *Panzergrenadier Bataillonen*) and another mixed Italo-German force in the Maknassy Pass sector.

The German-Italian attack began before dawn on the morning of 30 January and the veteran 21. Panzer-Division quickly surrounded the French battalion defending the Faïd Pass and another battalion defended the nearby Rebaou Pass. The I./Pz.Regt. 5 and eight Semoventi da 75/18 from the DLVII Group supported the attack, but four tanks were damaged by mines and French 75mm artillery fire.[80] The French positions were fairly strong and could not be quickly overrun. The French commander immediately called on the American II Corps for help, but this was slow in responding due to poor inter-Allied communications. McQuillin's CCA (with Lieutenant Colonel Louis V. Hightower's 3-1 AR, Kern's 1-6 AIB, one company of 701st Tank Destroyer Battalion and two artillery battalions) was given vague orders by Fredendall (not Ward, the division commander) at 0930 hours to support the French at Faïd Pass. Fredendall was a master at the use of garbled communications – often using slang and non-military terms – and he failed to impart any sense of urgency to McQuillin. The distance from CCA's positions around Sbeitla to Faïd Pass was 50 kilometres. Given the lack of clear, direct orders from Fredendall, McQuillin opted to send his reconnaissance company out first, followed by a single tank company, then other bits and pieces. By 1430 hours, the vanguard of CCA was still 11 kilometres short of Faïd Pass and McQuillin decided that he would suspend operations for the day and use the night to bring up the rest of his brigade. In *An Army at Dawn*, author Rick Atkinson insinuated that McQuillin was 'a genuine blockhead' and similar to George Armstrong Custer, which is indicative of poor research.[81] While it is true that McQuillin was quite old to be a brigade commander (he was 55, whereas Rommel and Orlando Ward were both 51), he was in fact quite intelligent. McQuillin was better educated than most US Army officers, having completed graduate school at Yale, and he was the Honor Graduate in the US Army Command & General Staff School (CGSC) in 1925, which got him noticed by George C. Marshall. Anyone who has been through CGSC – which Atkinson has not – knows the honor graduate is never awarded to 'a blockhead'. The real problem with McQuillin was that he was commissioned in the cavalry branch in 1912 but never served in the cavalry after 1918. He had no combat experience, having spent the First World War in Hawaii, and no significant prior command experience. McQuillin spent the critical years of 1927–40 assigned to the White House, the War Department and as an instructor at CGSC. When war approached, McQuillin was suddenly sent to the 1st Armored Division in 1940, despite not having been near troops for over 20 years. The real lesson provided by McQuillin's poor performance at Faïd Pass was that the US Army at the start of the Second World War had a defective system for selecting senior command cadre, and the root cause was George C. Marshall's overt favouritism toward officers who excelled in staff duties.

While CCA delayed its assault, the Germans had detected the approaching American armoured column and spent the night emplacing their anti-tank guns. The 21. Panzer-Division had also received six of the new 8.8cm Flak 41 guns, which had lower profiles than the previous 8.8cm Flak guns and were thus better suited for the anti-tank role.

McQuillin did not issue an operational plan until 0330 hours, but it consisted simply of a frontal attack with a single tank company (H Company, 3-1 AR with 17 M4/M4A1 medium tanks and one platoon of tank destroyers from the 701st Tank Destroyer Battalion) and a supporting attack by one dismounted infantry battalion (1-26 Infantry).[82] One artillery battalion (91 FAB) equipped with 105mm self-propelled howitzers was available for supporting fires, but virtually no information was available on enemy strength or dispositions. Indeed, the tankers in H Company were told to expect only a few enemy anti-tank guns, but nothing was said about enemy tanks. When McQuillin finally began his attack at 0830 hours on 31 January, the Germans were waiting on the high ground. For the first few minutes, the American tank company advanced across the open plain. Sergeant Baskem Bennet, a tank commander in H Company, recalled that:

> We had started across the field when suddenly ten German tanks came up on our flank. They opened up on me and hit me three or four times before they came through. Meanwhile we were firing continually. About that time two 77mm [sic] shells went through the turret and I discovered that my tank was on fire. I called down to the driver and radio man, but

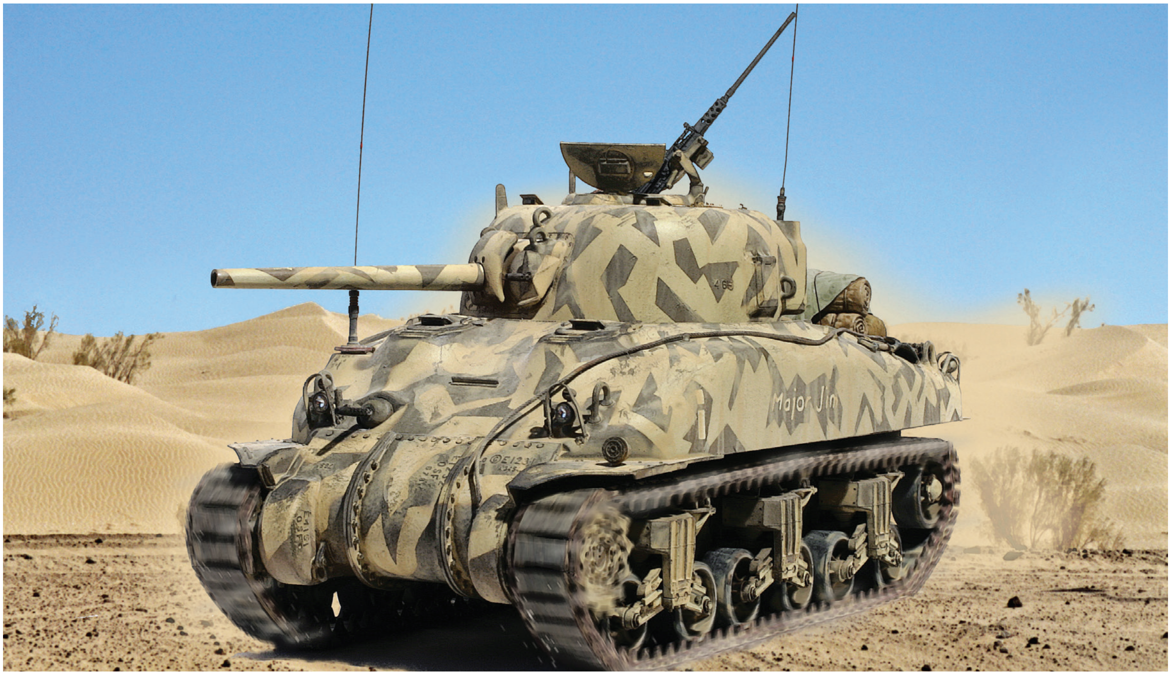
> they must have been hit, because they didn't answer. The tank was burning badly now so I jumped out with the remainder of my crew. Our tank was burning yet, but it just kept going forward, and we jumped into a ditch and watched it go. Soon we were surrounded by German tanks.[83]

Sergeant James H. Bowser, another of the American tank commanders, said:

> I'm on the right of my platoon leader and he's in the center. I've got another tank on my right. We start in at daylight, move down the Pass between the mountain and the marsh, and pretty soon at nine o'clock we run into the Germans. I looked to the center and saw the lieutenant's tank go up in fire. So I turned my gun on the anti-tank gun that knocked him out and smashed it with my first shot of high explosive ammunition. We knew that it was really hot; nine of our tanks had been cleaned out. They knocked my track off. Then one of my boys said our tank was burning.

One American M4A1 tank, named 'Honky Tonk', had its turret completely blown off. After losing nine M4 medium tanks destroyed by a combination of tank and anti-tank fire, H Company retreated. The Germans even received air support during the American attack, with low-flying fighter-bombers strafing the exposed tanks. The next day, McQuillin mounted another half-hearted effort with another tank company and two infantry battalions, which also failed to relieve the encircled French positions. Consequently, the 21. Panzer-Division's Kampfgruppe Pfeiffer occupied the entire Faïd Pass by the end of 1 February, taking over 1,000 French troops prisoner.

While McQuillin was fumbling his mission at the Faïd Pass, Fredendall was breaking up the 1st Armoured Division – without consulting Ward – to pursue other tasks. According to existing US armoured doctrine, an armoured division could operate up to three semi-independent combat commands. By the end of January, the 1st Armored Division was already operating with three combat commands in the field (CCA, CCB, CCC). Combat Command C (which included one company of tanks and 3/6 AIB) was supposed to support McQuillin's CCA, but was so disorganized by contradictory orders from Fredendall that it accomplished nothing. Fredendall then decided to organize a fourth combat command, CCD, with 3-13 AR, some tank destroyers, one 'leg' infantry battalion and one artillery battalion, under the command of Colonel Robert V. Maraist. Fredendall ordered Maraist to re-occupy Sened station, then push on to the Maknassy Pass. By this point, the Axis had moved part of the 'Centauro' division to reinforce this sector, as well as Kampfgruppe Stempel with two armoured reconnaissance battalions. Combat Command D managed to occupy Sened station on 1 February – at considerable cost in manpower – but encountered stiff resistance when trying to approach the Maknassy Pass. After several days of sparring, CCD pulled back, having lost four light tanks, three GMC, nine halftracks and over 300 casualties.[84]



A US Army M4A1 medium tank from 2-13th AR, 1st Armored Division, Tunisia, March 1943. US units experimented with various local camouflage schemes, but these were not standardized. (Courtesy of Steve Zaloga)

The 21. Panzer-Division and attached Axis forces achieved a significant operational-level success by capturing the Faïd Pass and retaining the Maknassy Pass. By holding these important passes in the Eastern Dorsal range, the Axis could easily block any effort by the US II Corps to advance toward Sfax and Gabès. In addition, retention of these two passes put the Axis in a favourable position to mount further disruptive attacks against the US II Corps, which was now badly dispersed.

As part of *Eilbote II*, the Axis also hoped to achieve further success against the rest of the French XIX Corps. On the morning of 31 January, Kampfgruppe Weber tried to renew its attack toward Robaa, but was unaware that the British 78th Infantry Division had moved its 36th Infantry Brigade into this sector. Oberleutnant Löse led six Tigers and four Pz III Ausf N from 2./s.Pz.Abt. 501 in column along the road to Robaa. The column encountered the 5th Battalion Buffs and the 72nd Anti-tank Regiment, which had established an anti-armour ambush. The well-trained British battalion had emplaced mines on and near the road, which were effectively covered by 6-pounder anti-tank guns. When the Germans moved forward in an attempt to breach the minefield, one Tiger was badly damaged by anti-tank fire and two Pz III were destroyed. Undeterred, the German tanks tried again; this time, two more Pz III were destroyed and Tiger 231 was engaged from the side by 6-pounder guns firing from about 500 metres (on paper, the 6-pound AP round could penetrate 70–80mm of armour at this range). The Tiger's side armour was penetrated and the tank burst into flames – the first Tiger destroyed by an Allied anti-tank gun.[85] Following this setback, Kampfgruppe Weber cancelled its attack toward

Robaa. Even worse, Fischer went out on a reconnaissance with his operations officer on the morning of 1 February and was killed when his vehicle drove into a minefield.[86] With Fischer gone and Allied resistance increasing in central Tunisia, von Arnim terminated *Eilbote II.*

The active defence conducted by von Arnim's 5. Panzerarmee in December and January proved to be a major success and ensured that valuable time was gained to reinforce the Tunisian bridgehead. Despite Allied air-sea interdiction efforts, by the end of January 1943 Axis ships and aircraft had moved 81,222 German military personnel and 30,735 Italian troops into Tunisia, along with over 100,000 tons of supplies.[87] Nevertheless, logistics remained the Achilles heel of Axis forces in North Africa, and there was never enough ammunition and fuel to conduct the kind of aggressive mechanized operations for which German doctrine was designed. The employment of Tiger tanks was particularly hampered by shortages of spare parts and adequate maintenance support; these highly engineered tanks were simply not made to operate in a vacuum. Instead, von Arnim and Rommel could only conduct limited counteroffensives in an attempt to delay the inevitable link-up of the British 1st and 8th Armies.

KASSERINE PASS: FEBRUARY 1943

'When the German tanks come out, they stay out of range and sit and watch. Then they move a little, stop, and watch some more. They have excellent binoculars and they use them carefully. They always seem to make sure of what they are going to do and where they are going before they move…'

Major Allerton Cushman[88]

Von Arnim considered following up his success after the capture of Faïd Pass, but he was thinking in terms of another limited spoiling attack to knock the American 1st Armored Division back on its heels. Meanwhile, Generale Giovanni Messe had arrived at Mareth on 31 January and informed Rommel that while he was in no rush to take command of the Italo-German Panzerarmee (ACIT), Rommel was expected to leave North Africa in the near future. Unsettled by the prospect of being replaced by an Italian officer and leaving with his reputation under a cloud, Rommel seized the opportunity to promote the idea of a much larger counteroffensive against the American II Corps, using all three German Panzer-Divisionen in North Africa and the 'Centauro' division. Von Arnim pointed out that the Axis forces lacked the logistic resources to mount a major counteroffensive (on 4 February the 10. Panzer-Division had only 1.5 V.S. of fuel and 0.7 basic load of ammunition, with a small reserve in depots) and recommended a single attack against McQuillin's CCA at Sidi Bou Zid, 16 kilometres west

A *Zug* (platoon) of Pz III Ausf N advance across a muddy valley during the Battle of Kasserine Pass. Note the dominant heights in the background. (Author's Collection)

of the Faïd Pass.[89] Rommel tried to portray von Arnim to Kesselring and the Commando Supremo as timid, while instead recommending an advance to seize Gafsa, then boldly pushing on through the Western Dorsal mountains as far as Tébessa to overrun the Allied line of communications – a total distance of over 150 kilometres. Of course, Rommel noted that he would need some of von Arnim's forces to conduct this larger offensive, which von Arnim opposed. Nevertheless, Rommel still had some dazzle, unlike the professional but dour von Arnim, which convinced the Commando Supremo to opt for a compromise – giving both commanders part of what they wanted.

Kesselring and the Commando Supremo authorized von Arnim to conduct his limited attack at Sidi Bou Zid with the 10. and 21. Panzer-Divisionen; this operation would be designated *Unternehmen Frühlingswind* (Spring Wind). Since he was still responsible for holding off Allfrey's V Corps with the rest of 5. Panzerarmee, von Arnim designated his chief of staff, Generalleutnant Heinz Ziegler, to have operational control over the forces involved in *Frühlingswind*. Ziegler, an artilleryman, was a competent Generalstab officer who had spent most of the war in corps-level staff assignments in France and Russia. Ziegler's attack would occur first, and once McQuillin's CCA was defeated, Ziegler would transfer the 21.Panzer-Division to Rommel, so he could then conduct his attack – designated as *Unternehmen Morgenluft* (Morning Breeze) – to seize Gafsa.[90] However, Rommel had not really convinced Kesselring or the Commando Supremo that he could capture any objectives beyond Gafsa, so the operational objectives were left intentionally vague. It might seem surprising that a commander who was about to be relieved would be given permission to mount a major offensive, but the Axis senior leaders were desperate for a victory at this point. Rommel had been known to deliver tactical miracles in the past and there was always the chance that he might pull off a major success again. Yet time was of the essence, since Montgomery's 8th Army would soon be reaching Mareth and 5. Panzerarmee estimated that the British might be in a position to attack as soon as 20 February. Several precious days were lost due to heavy rains which began on 8 February, delaying the German concentration of forces.

Although the Allies were aware from ULTRA signals intelligence that the Axis were planning a counteroffensive of some kind in Tunisia, the multiple courses of action being discussed by von Arnim, Rommel, Kesselring and the Commando Supremo created a great deal of ambiguity. At Eisenhower's Allied Forces Headquarters (AFH) in Algiers, the senior intelligence officer (G-2) was Brigadier Eric E. Mockler-Ferryman, an artilleryman who moved into the intelligence field at the start of the Second World War. By February 1943, Mockler-Ferryman was a fairly experienced intelligence officer and had been cleared for ULTRA-derived reporting since 1940. However, Mockler-Ferryman had mostly been involved in supporting the air defence of Great Britain and possessed minimal experience in analyzing enemy ground operations. ULTRA was able to intercept a considerable amount of German radio traffic about their impending operations – mostly from Luftwaffe sources – which seemingly did not attach much importance to *Frühlingswind* or *Morgenluft*. Consequently, Mockler-Ferryman concluded that any Axis attacks against the US II Corps would be feints, while the main counterattack would come through the Fondouk Pass to crush the French XIX Corps, then envelop the right flank of the British V Corps. Mockler-Ferryman's intelligence assessment – which had a significant impact upon Allied dispositions – was reasonable but wrong. Unlike modern intelligence officers, who are trained to identify an enemy's most likely course of action as well as alternatives, Mockler-Ferryman put everything on one interpretation and failed to warn decision-makers that the supporting evidence was far from conclusive.[91] Furthermore, Allied intelligence made a common mistake in Tunisia by assuming that logistic shortages would prevent the enemy from launching any large-scale counteroffensive (in intelligence circles, this is called 'mirror imaging' – if we can't attack without a given level of supplies, then that holds true for the enemy as well). The same kind of mistaken intelligence analysis would re-occur prior to the German Ardennes counteroffensive in December 1944.

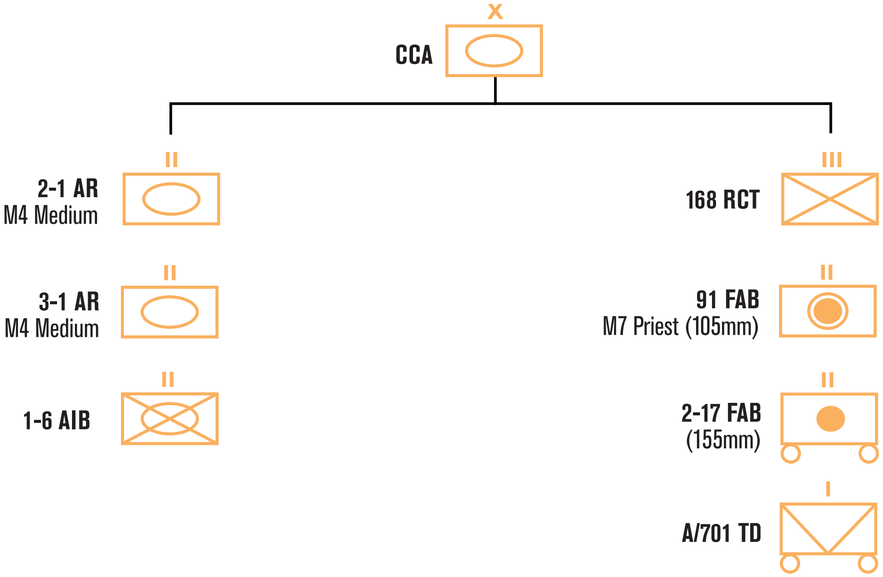
Once provided Mockler-Ferryman's intelligence assessment, Anderson asked Eisenhower for American reinforcements from Algeria-Morocco in order to improve defences in the north-central part of the Tunisian front. Anderson received all of the American 1st Infantry Division and part of the 34th Infantry Division, but he decided to disperse them across a wide front and assigned most of them to support the French and Allfrey's V Corps; the French received five American infantry battalions (16 RCT and 133 RCT) and retained Robinett's CCB while Allfrey was provided three American infantry battalions (the 18 RCT). Fredendall's II Corps was only provided with three infantry battalions from the 168 RCT, 34th Infantry Division. On

A US M4 medium tank near Sidi Bou Zid, shortly before the German attack on 14 February 1943. (Alamy, KWB73Y)

the plus side, the 1st Armored Division had traded most of its ineffective M3A1 light tanks in for M4 medium tanks, which increased the combat power of the extant armoured battalions. Only Gardiner's 2-13 AR, in CCB, was still equipped with M3 medium tanks. Prior to the Axis counteroffensive, American forces in south-central Tunisia were badly scattered and reporting to three different chains of command. It was ridiculous. Yet when Eisenhower visited the forward positions near Sidi Bou Zid on the evening of 13 February, he was annoyed, but made no immediate changes. As a field grade officer I learned that if you observe a problem and do nothing to correct it, you become part of the problem.

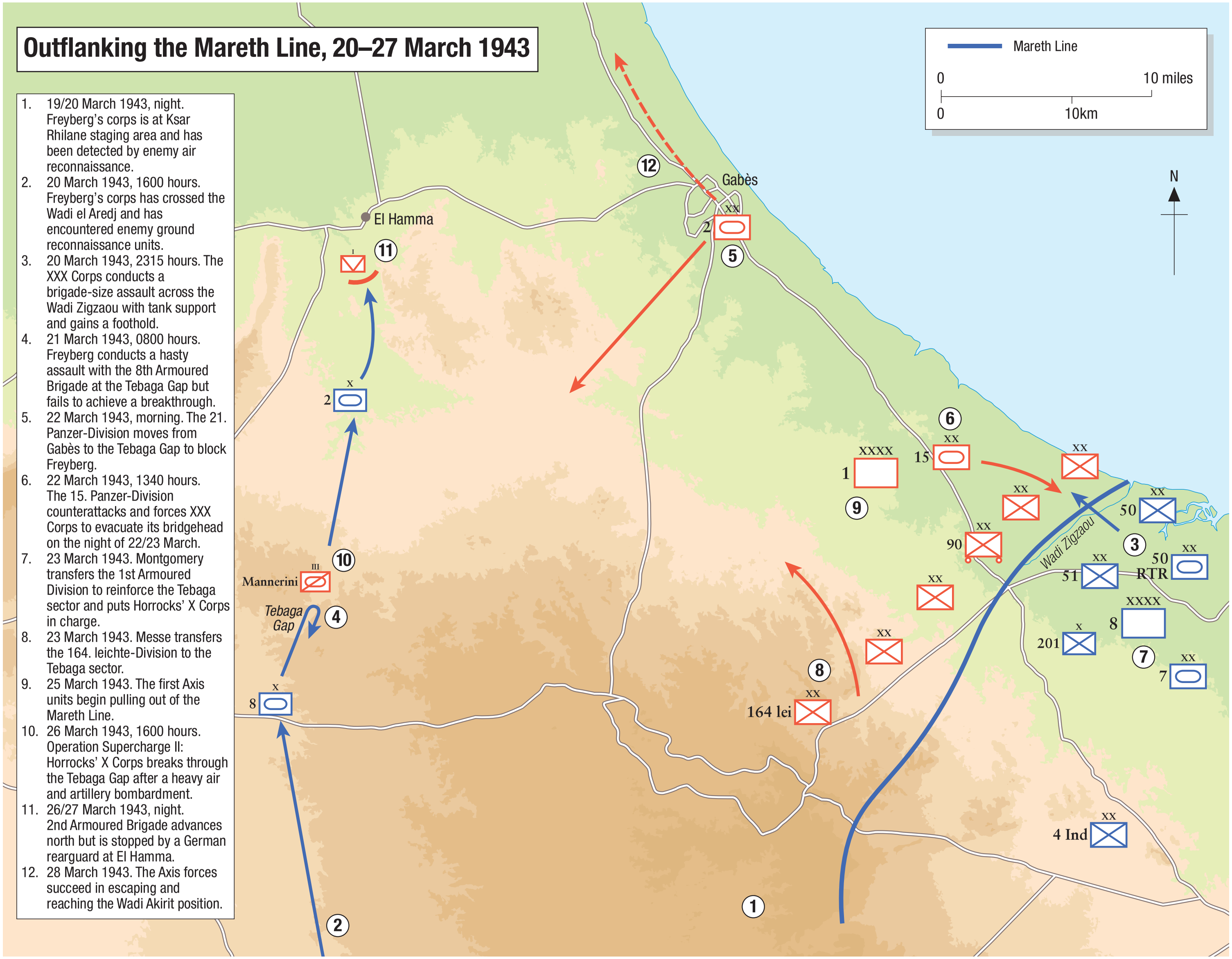
Added to poor operational-level intelligence assessments and faulty deployments, Fredendall further undermined II Corps' position through micro-management. Brusquely shoving a demure Orlando Ward out of the picture, the cocksure Fredendall dictated the deployment of 1st Armored Division down to company level and below. Fredendall's G-2, Colonel Benjamin Dickson, warned Fredendall that the Germans might conduct an attack out of the Faïd Pass, which Fredendall did not fully accept due to contradictory assessments by AFH. Yet Dickson not only had access to strategic-level reporting from ULTRA, but also had tactical-level reporting including prisoner interrogations and patrol reports – which supported the conclusion that the Germans were up to something in the Faïd Pass sector. Consequently, Fredendall ordered McQuillin's CCA and the attached 168 RCT to form a defensive position near Sidi Bou Zid to monitor the pass. The

COMBAT COMMAND A, 14 FEBRUARY 1943



two infantry battalions of the 168 RCT were deployed in non-supporting positions in high ground east of Sidi Bou Zid (Djebel Lessouda and Djebel Ksaïra), with 16 tanks from G Company, 3-1 AR (under the command of Major Norman Parsons, the XO of 3-1 AR) and some tank destroyers in direct support. McQuillin kept the remaining two companies of Lieutenant Colonel Louis V. Hightower's 3-1 AR in tactical reserve near the CCA command post in Sidi Bou Zid, while Lieutenant Colonel James D. Alger's 2-1 AR was 40 kilometres further west in Sbeitla. Both Hightower and Alger were regular army officers, products of West Point, and their battalions were equipped with a total of 96 M-4/M4A1 medium tanks. CCA also had plenty of infantry and artillery support, including M7 Priest self-propelled howitzers. On paper, CCA seemed capable of standing up to a single understrength German Panzer-Division, at least until help arrived. The rest of the 1st Armored Division, namely Stark's CCC and Maraist's CCD, were either keeping an eye on the Maknassy Pass or in reserve.

Generalmajor Friedrich von Broich's 10. Panzer-Division moved into its forward assembly positions during the night of 13/14 February. The attacking force was provided with 2.5 V.S. of fuel and 1.2 loads of ammunition – adequate for about three days of fighting.[92] The main body of the 10. Panzer-Division began moving through the Faïd Pass around 0400 hours on 14 February, concealed by an ongoing sandstorm. Visibility was near zero, but somehow the experienced German tankers were able to make it through the pass without incident. Italian troops, holding the pass, marked the route for them with concealed lights. American scouts from the 168 RCT heard the sound of tanks, but could see nothing. After clearing the pass, the German



Outflanking the Mareth Line, 20–27 March 1943

1. 19/20 March 1943, night. Freyberg's corps is at Ksar Rhilane staging area and has been detected by enemy air reconnaissance.
2. 20 March 1943, 1600 hours. Freyberg's corps has crossed the Wadi el Aredj and has encountered enemy ground reconnaissance units.
3. 20 March 1943, 2315 hours. The XXX Corps conducts a brigade-size assault across the Wadi Zigzaou with tank support and gains a foothold.
4. 21 March 1943, 0800 hours. Freyberg conducts a hasty assault with the 8th Armoured Brigade at the Tebaga Gap but fails to achieve a breakthrough.
5. 22 March 1943, morning. The 21. Panzer-Division moves from Gabès to the Tebaga Gap to block Freyberg.
6. 22 March 1943, 1340 hours. The 15. Panzer-Division counterattacks and forces XXX Corps to evacuate its bridgehead on the night of 22/23 March.
7. 23 March 1943. Montgomery transfers the 1st Armoured Division to reinforce the Tebaga sector and puts Horrocks' X Corps in charge.
8. 23 March 1943. Messe transfers the 164. leichte-Division to the Tebaga sector.
9. 25 March 1943. The first Axis units begin pulling out of the Mareth Line.
10. 26 March 1943, 1600 hours. Operation Supercharge II: Horrocks' X Corps breaks through the Tebaga Gap after a heavy air and artillery bombardment.
11. 26/27 March 1943, night. 2nd Armoured Brigade advances north but is stopped by a German rearguard at El Hamma.
12. 28 March 1943. The Axis forces succeed in escaping and reaching the Wadi Akirit position.

Mareth Line
0
10 miles
0
10km
N
Gabès
El Hamma
Mannerini
Tebaga Gap
Wadi Zigzaou
XX
2
XX
15
XXXX
1
XX
90
XX
164 lei
X
2
X
8
III
I
XX
50
XX
51
XX
50 RTR
XXXX
8
X
201
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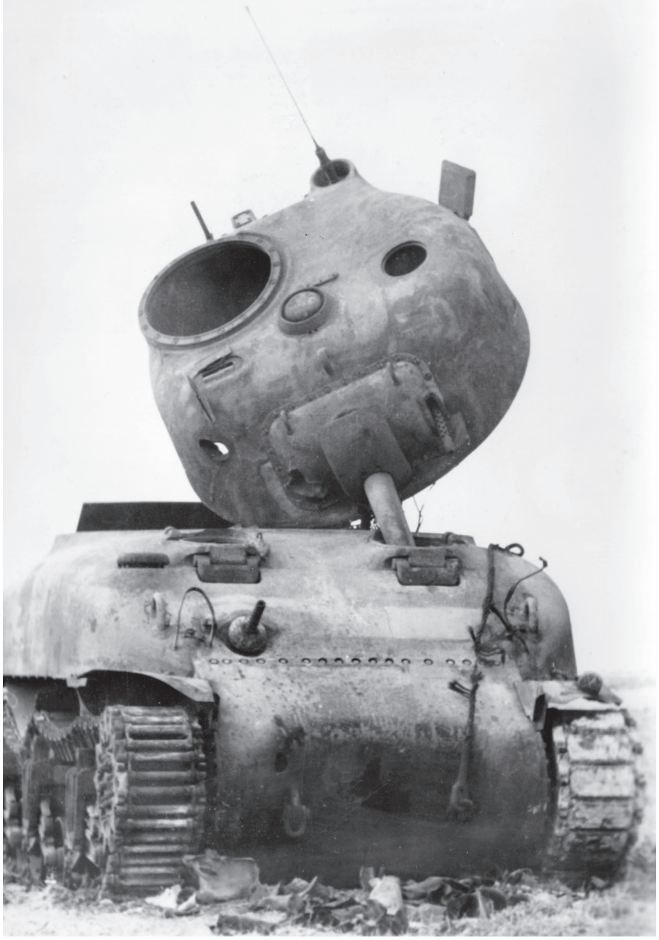
Panzer-Division deployed on the open plain at 0620 hours and split into two assault groups: Kampfgruppe Gerhardt on the right and Kampfgruppe Reimann on the left. Gerhardt was the main manoeuvre element, with Hauptmann Helmut Hudel's I./Pz.Regt. 7 (39 tanks) and II./Pz.Gren. Regt. 69 mounted in SPW halftracks; this force swung wide to envelop the American forces on Djebel Lessouda. Kampfgruppe Reimann veered south of Djebel Lessouda, spearheaded by six Tiger tanks from 1./s.Pz.Abt. 501.

The 46-year-old Oberst Rudolf Gerhardt, commander of Pz.Regt. 7, was one of the most experienced front-line Panzer officers in the Heer. During the First World War, Gerhardt commanded an infantry company in the battles of Verdun, the Somme and Passchendaele and was wounded four times. He left the army after the war but rejoined when Hitler came to power and was one of the first to join the new *Panzertruppen*, commanding a *Panzer-Kompanie* in 1935. At the start of the Second World War, Gerhardt was commanding a *Panzer-Abteilung*, which he led in Poland, France and Russia between 1939 and 1942. He was awarded the Ritterkreuz des Eisernen Kreuzes for his performance at the Battle of Smolensk. Likewise, the 27-year-old Helmut Hudel was also a very experienced armour leader, having joined the *Panzertruppen* in 1936. Hudel first saw action in Poland in 1939 and served as a tank platoon leader and tank company commander on the Russian front in 1941–42. In between campaigns, Hudel was provided additional training to hone his tactical skills and decision-making; the Wehrmacht excelled at building professional junior-level officers. By May 1942, Hudel was wearing a Ritterkreuz des Eisernen Kreuzes at his throat and given a *Panzer-Abteilung* to command. It is important to keep in mind that the inexperienced American tankers were going up against veteran, professional armour leaders, often with 5–7 years of experience. Indeed, the imbalance in skill level was far more important than the technical characteristics of the tanks involved.

Major Norman Parsons was with ten M4A1 medium tanks of Company G, 3-1 AR, deployed as a covering force about 5 kilometres south-east of Djebel Lessouda. The crews were apparently eating breakfast or just not alert when the German armour appeared and were quickly destroyed; when Major Parson's tank was destroyed, communications were lost. The company executive officer quickly brought up the remaining six M4A1 tanks, but these were also destroyed. While Panzer-Artillerie Regiment 90 bombarded the Djebel Lessouda to suppress the American defenders, Kampfgruppe Gerhardt manoeuvred quickly to encircle the position. The M7 Priest self-propelled howitzers of B Battery, 91 FAB were deployed on the plain in front of Djebel Lessouda and engaged Kampfgruppe Gerhardt over open sights, but moving tanks are very difficult to engage with artillery. Around 0820 hours, B Battery tried to displace away from the approaching enemy armour, but its vehicles became bogged in muddy terrain and all the guns were overrun. Kampfgruppe Gerhardt also eliminated a platoon of GMCs from the 701st Tank Destroyer Battalion. Lieutenant Colonel John Waters, in command of 'Lessouda Force', ordered the 2-168 IN to retreat to higher ground to avoid being overrun by



One of the M4 medium tanks from Alger's 2-1 AR battalion destroyed at Sidi Bou Zid on 15 February 1943. Alger led his battalion right into an Afrika Korps ambush, leading to the loss of 46 M4s. (SDZ, 02904361)

the Panzers, but they were now surrounded. The encircled American infantry used their 81mm mortars to keep the German *Panzergrenadiers* at bay, but their 37mm anti-tank guns were nearly useless against the German tanks. Hauptmann Hudel redeployed his tanks along the road to Sbeitla on the south side of Djebel Lessouda and awaited the expected American counterattack.

While Kampfgruppe Gerhardt was enveloping Djebel Lessouda, Kampfgruppe Reimann moved toward Sidi Bou Zid, pushing slowly along the Faïd–Sbeitla road. After Waters reported the enemy armoured attack to CCA, at 0730 hours McQuillin decided to commit Lieutenant Colonel Hightower's 3-1 AR and about 12 tank destroyers to 'clear up the situation' around Djebel Lessouda. At this point, McQuillin apparently assumed that the enemy was conducting a local attack with limited forces. Around 0830 hours, Hightower, in his tank *Texas*, led his H and I companies tentatively forward from Sidi Bou Zid, uncertain as to enemy strength or dispositions, since communications with Waters had been lost. Visibility was still poor due to early morning haze and wind-blown sand. Hightower had a 105mm artillery battery in support, but the Luftwaffe bombed and strafed his battalion several times. The Battle of Sidi Bou Zid is one of the few tank actions in North Africa in which after-action accounts from the tank battalion commanders (Hightower and Hudel) on both sides exist.[93] By 0930 hours, Hightower finally had clear observation of both Djebel Lessouda and toward the Faïd Pass and quickly grasped that he was up against an entire *Panzer-Division*. Hightower informed McQuillin and decided to conduct a delaying action, rather than a movement to contact. Hightower deployed H Company on his left and I Company on his right, in an area dubbed 'the cactus patch'. From his perspective, Hudel was not keen to engage M4 medium tanks in a long-range gunnery duel since he knew that the 75mm gun on the Sherman was superior in hitting power to the 5cm gun on most of his Pz IIIs. Hudel decided to hit the American tanks with a double pincer attack, sending two *Panzer-Kompanien* to the west and two to the east. At this point, around 1000 hours, the Germans had not yet brought up their 8.8cm Flak 41 guns, nor were the Tigers of s.Pz.Abt. 501 engaged either. It was simply Hightower's 36 M4 medium tanks and a battery of M7 howitzers against Hudel's 39 medium tanks (of which no more than eight were Pz IVs). Initially only a few American tanks were knocked out by long-range fire from the few Pz IVs, while the American tankers used HE rounds at first to try to immobilize enemy tanks. Hightower's delaying action did succeed in slowing the attack by 10. Panzer-Division, while CCA headquarters began evacuating Sidi Bou Zid at 1100 hours.

However, Hightower was unaware that another threat was rapidly approaching from the south: Oberst Hans Georg Hildebrandt's 21. Panzer-Division, which had moved through the Maizila Pass, south of Sidi Bou Zid. Kampfgruppe Schütte headed straight for Djebel Ksaïra and by 1200 hours they had isolated the 3-168 IN on the high ground. Meanwhile, Kampfgruppe Stenkhoff, with most of the I./Pz.Regt. 5, took a long route to the south in order to outflank the American positions. By 1400 hours, the tanks of Kampfgruppe Stenkhoff were approaching Sidi Bou Zid from the west. The Luftwaffe also conducted numerous ground attack sorties against the American forces around Sidi Bou Zid, inflicting considerable damage and disruption; one Stuka attack destroyed the prime movers for the 2-17 FA, which was forced to abandon all 12 of its obsolete Schneider 155mm howitzers. McQuillin did not wait to be surrounded, but quickly decamped his command post and moved it back 16 kilometres on the road to Sbeitla ('Kern's Crossroads'). By 1200 hours, the Germans had brought up some 8.8cm Flak guns and the Tigers of 1./s.Pz.Abt. 501 were engaged, which caused Hightower's losses to quickly increase. Hightower left ten M4 tanks to slow down the 10. Panzer-Division, while shifting his own *Texas* and four others to prevent the 21. Panzer-Division from intercepting the retreating elements of CCA. Hightower opted to engage an approaching company of ten tanks from Pz.Regt. 5 with his own five tanks. He claimed to have hit four enemy tanks before his own M4 was penetrated by hits on the lower hull and turret – he managed to abandon the tank with his crew just before it burst into flames. By 1400 hours, Hightower's battalion had been well-nigh eradicated, and only six of 52 tanks made it back to Kern's Crossroads (personnel losses were reported as six killed, 22 wounded and 136 missing).[94] Hightower was fortunate, in that he was able to walk back to friendly lines.

By 1400 hours, Sidi Bou Zid had been occupied by the 10. Panzer-Division and soon afterward it linked up with the 21. Panzer-Division. The two battalions of the American 168 RCT were left isolated on Djebel Lessouda and Garet Hadid. After the tank action ended, German *Panzergrenadiers* began overrunning some of the outer positions and succeeded in capturing Lieutenant Colonel Waters. Remarkably, Ziegler made no immediate effort to pursue the badly disrupted CCA and instead settled into defensive positions around Sidi Bou Zid, mopping up isolated 168 RCT elements while anticipating that the Americans would mount a relief effort the next morning. The 10. Panzer-Division deployed some of its anti-tank guns in Sidi Salem, along the likely enemy avenue of approach. Meanwhile, at Kern's Crossroads, McQuillin began assembling a relief force, based upon Kern's 1-6 AIB and one company of light tanks from 1-13 AR. At Sbeitla, Ward moved Stark's Combat Command C to support McQuillin and Colonel Stark was assigned to lead the relief operation. Fredendall requested that Anderson's 1st Army release Robinett's CCB to participate in the relief effort, but Anderson's staff still held the misconception that the 10. Panzer-Division might still move against the French XIX Corps.[95] Anderson only grudgingly released Lieutenant Colonel Alger's 2-1 AR to reinforce Stark's CCC. Consequently, Ward was forced to mount a hasty relief operation, with inadequate forces, before the 168 RCT was overwhelmed.

Alger spent the morning of 15 February preparing for a textbook assault with his tank battalion and the 1-6 AIB supported by two batteries of self-propelled 105mm howitzers (B and C, 68 FAB). He took the time to lead a two-hour rehearsal – which would have gratified the tactics instructors at Leavenworth – but made no effort to conduct pre-battle reconnaissance.[96] However, this leisurely approach also gave Ziegler time to prepare a very well-coordinated anti-armour defence. Around 1240 hours, Alger's battalion began advancing eastwards, with D and E Companies in wedge formation and F Company trailing, followed by the two artillery batteries and the infantry in halftracks. The American relief operation had to cross over 20 kilometres of flat desert terrain in broad daylight, which meant there was no chance of achieving surprise. The route of advance was bisected by three *wadi*s, which constricted movement and forced a temporary shift to march in column. It was when D Company was exiting the second *wadi* that the German artillery and anti-tank guns opened fire. Several D Company tanks were hit, but Alger ordered the two supporting artillery batteries to lay down suppressive fire on suspected enemy positions, which temporarily reduced incoming fire. As usual, the German 5cm Pak 38 guns, hidden in the olive groves and cactus patches, proved difficult to spot – but D Company managed to overrun six guns. Alger pressed on and reached the village of Sidi Saleh around 1530 hours after personally destroying two enemy tanks. However, Ziegler (who was observing the action from his command post atop the Faïd Pass) recognized that the American armoured force was much smaller than expected and ordered both 10. and 21. Panzer-Divisionen to mount pincer attacks with their armour against the American flanks. By 1545 hours, the Americans spotted about 30 German tanks approaching Sidi Salem from the north (Huder's I./Pz.Regt. 7) and a few minutes later, 30 approaching from the south (I./Pz.Regt. 5).

Alger's battalion was soon under attack from three directions, with multiple tanks being hit. Around 1700 hours, Alger's tank was hit by five rounds and began to brew up. Alger and two crewmen survived, but were soon captured. Altogether, 2-1 AR lost 46 M4 medium tanks and suffered 313 casualties.[97] Once Alger's battalion was destroyed, the remainder of Stark's CCC abandoned the attack and retreated to avoid destruction. With the relief effort crushed, the two encircled infantry battalions from the 168 RCT attempted a breakout operation on the night of 16/17 February, but of

2,800 infantrymen, fewer than 500 reached American lines. In two days, two American tank battalions had been obliterated, without achieving much. Although the Americans claimed to have knocked out about 20 German tanks in the actions on 14–15 February, the Germans were able to recover all their damaged tanks from the battlefield and many were probably repaired. Furthermore, the Germans succeeded in capturing a good deal of equipment, including more halftracks, which they incorporated into their own units. Most accounts of the fighting around Sidi Bou Zid focus heavily on the role of the Tiger tanks from s.Pz.Abt. 501, but post-battle analysis of M4 wrecks indicated that the majority of American medium tanks were knocked out by 5cm or 7.5cm rounds. The Tigers did achieve a number of kills, but they were not a major factor in the American defeat (they were not even involved in the action against 2-1 AR). Photographic evidence of wrecks also indicates that the M4's level of armoured protection was quite good for the battlefield of 1943, with many enemy rounds failing to achieve penetrations.

Despite the destruction of Alger's battalion and the elimination of the 168 RCT, Ziegler failed to follow up this success with an immediate attack toward Kern's Crossroads or Sbeitla on 16 February. Von Arnim was much more methodical than Rommel, preferring to eliminate the encircled 168 RCT before attempting any other missions. Consequently, Gruppe Ziegler spent three days around Sidi Bou Zid, essentially involved in mop-up operations. On the Allied side, Anderson was dismayed by the American defeat at Sidi Bou Zid and by the evening of 15 February issued a warning order to Fredendall to prepare to withdraw to the Western Dorsal, which meant abandoning Sbeitla, Gafsa and the airfield at Thelepte. Indeed, Fredendall had already abandoned Gafsa, which allowed Rommel to occupy the town with a *Kampfgruppe* from the DAK on 16 February. However, the effortless capture of Gafsa allowed von Arnim to tell Rommel that *Unternehmen Morgenluft* was now moot and thus there was no reason to transfer the 21. Panzer-Division. The Comando Supremo also ordered Rommel to hold at Gafsa while transferring units back to the Mareth Line – another order that Rommel chose to ignore. For his part, von Arnim decided that he was going to keep both Panzer-Divisionen, but was undecided whether to use them either to capture Sbeitla or to roll up the French XIX Corps. Meanwhile, the remainder of Robinett's CCB was shifted to defend Sbeitla on 16 February, but Fredendall was inclined to abandon the position. Anderson insisted that the town should be held until the evening of 17 February to buy time for more reinforcements to be shifted to II Corps. Lieutenant Colonel Ben G. Crosby's 3-13 AR, still equipped with M3 medium tanks, arrived in time to prevent Kampfgruppe Gerhardt from pushing toward Sbeitla on the afternoon of 16 February. Soon thereafter, Gardiner's experienced 2-13 AR (with a mix of M3 and M4 mediums) arrived and occupied a blocking position 6 kilometres south-east of Sbeitla, with some tank destroyers and artillery in support. By late on 16

February, elements of CCA, CCB and CCC were assembling around Sbeitla, the first time that Ward had most of 1st Armored Division in one place – although there was a distinct lack of organization.

Even though Ziegler had been alerted by signals intercepts that the Americans were preparing to evacuate Sbeitla, he initiated a night advance on the evening of 16 February, with Kampfgruppe Gerhardt in the lead and Kampfgruppe Pfeiffer (Panzergrenadier-Regiment 104) following. The American forces were jittery and unprepared for a night action. Initial reports to Ward claimed that a large enemy armoured force – including nine Tigers and 80 other tanks – had penetrated the American covering force and were approaching Sbeitla. A panic ensued, with some personnel fleeing Sbeitla, while Ward sought permission to evacuate the town forthwith. Anderson agreed, but sought additional time to transfer the 26th Armored Brigade from 6th Armored Division to cover the Sbiba Gap, 35 kilometres north of Sbeitla. In fact, Ziegler was not willing to risk a night attack into Sbeitla and instead used the night and the morning of 17 February to bring up most of 10. and 21. Panzer-Divisionen to mount a deliberate attack on the town. Around noon, the German advance began, with Kampfgruppe Stenkhoff (Rohr's I./Pz.Regt 5) in the lead. Lieutenant Colonel Hershel D. Baker's 601st Tank Destroyer Battalion tried to oppose the German armour, but the thin-skinned GMCs proved no match for well-handled tanks and were routed.[98] Kampfgruppe Stenkhoff rolled on toward Sbeitla and the only force left to stop them was Gardiner's 2-13 AR. Crosby's 3-13 AR had prematurely withdrawn at 1100 hours, leaving Gardiner without support.[99]

The 37-year-old Gardiner had an unusual background for an armour officer, since he was not a product of West Point nor ROTC. Instead, he had received his law degree from Cornell University and became a corporate lawyer in Chicago. In 1935, he enlisted in the 106th Cavalry, Illinois National Guard. When war approached, he was given a commission and called to active duty. After Pearl Harbor, Gardiner was promoted to captain and assigned to the 1st Armored Division in June 1942; in 28 months he rose from second lieutenant to major, despite lack of any serious military training.[100] Gardiner was something of a dilettante and did not set foot on a tank until April 1942; even then he was provided only the minimum of technical training on the M3 medium tank and nothing about armoured tactics. When Bruss was relieved of command of 2-13 AR in December, Gardiner was given command of the battalion. Although Gardiner first saw action around Tébourba (and was wounded) in November, his level of experience was an order of magnitude less than the German battalion commanders he was up against in February.

Outside Sbeitla, Gardiner, in his M4 named *Henry II*, had deployed his battalion in hull-down positions in a *wadi* and camouflaged them with mud, which gave them a distinct advantage against the German tanks advancing across the open ground. Undetected, Gardiner allowed the enemy to close to under 800 metres before issuing his fire command around 1315 hours. Five German tanks were knocked out in the opening volley and Kampfgruppe

A *Panzergrenadier* column from the 10. Panzer-Division advances toward the Kasserine Pass. Note the inclusion of captured American M3 halftracks and jeeps in the column. The Germans proved quite adept at integrating captured equipment into their front-line units. (Author's Collection)

Stenkhoff recoiled from the ambush. Gardiner was in a good position, with artillery and some infantry support, but CCA was already pulling out of Sbeitla and Gardiner was told to conduct a rearguard action. Gardiner played for time, trying to slip one platoon at a time, while trying to avoid exposing his tall M3 mediums to flanking fire. Nonetheless, Gardiner was soon left with no friendly forces on either flank and he was forced to disengage under fire around 1730 hours. Stenkhoff's Panzers picked off nine retreating American tanks, including Gardiner's *Henry II*; Gardiner survived and was obliged to walk over 40 kilometres back to friendly lines. German forces entered Sbeitla on the night of 17/18 February and were amazed to find that the Americans had not fully destroyed the fuel depot. Altogether, Gruppe Ziegler would capture about 100 cubic metres of fuel during its offensive (roughly 1 V.S. of fuel for the two Panzer-Divisionen).

While Ziegler was shoving his way into Sbeitla, Rommel was desperately seeking one last opportunity for glory in North Africa. On 17 February, he pushed his advance units forward to occupy both the village of Feriana and the airfield at Thelepte, which the Americans had already evacuated. Since there was no glory to be had in Thelepte, Rommel looked 60 kilometres further north, to the main Allied supply base at Tébessa. He quickly concocted a plan to advance to seize Tébessa – but he needed von Arnim to transfer both 10. and 21. Panzer-Divisionen to his control to give him sufficient combat power. Once again, Rommel was returning to his 'Dash to the Wire' mindset about mechanized operations, which presupposed that cheap strategic victories could be achieved through bold manoeuvres. Rommel might have been able to reach Tébessa with his own DAK Kampfgruppe, small as it was, if he had moved at first light on 18 February. However, he was adamant about getting reinforcements from von Arnim, which led to extensive radio communications with 5. Panzerarmee, Kesselring's headquarters and the Commando Supremo. Amazingly, Rommel got his away and was given operational control over von Arnim's Panzers, but nearly two days were wasted by inactivity. The new operation would be called *Unternehmen Sturmflut* (Stormflood). Yet rather than making a direct advance upon Tébessa (which would require von Arnim's two Panzer-Divisionen to move 50 kilometres or more to the west), the Commando Supremo instead directed Rommel to move through the Kasserine

Pass to Le Kef. No doubt von Arnim inserted this requirement because he did not want Rommel using up his fuel reserves or wearing out his tanks on long marches. It was also clear that Kesselring did not want Rommel moving too far from the Mareth Line, which would soon have to contend with Montgomery's 8th Army.

Rommel was impatient to get moving and sent his vanguard (A.A. 3 and two *Panzergrenadier-Bataillonen*) into the Kasserine Pass on the morning of 19 February. The DAK spearhead was now led by Generalmajor Karl Bülowius, Rommel's senior engineer officer, who had very limited command experience. Kasserine Pass offered excellent defensive terrain, with a valley mouth that was less than 6 kilometres in width, dominant hill masses on both flanks that tanks could not climb and the meandering Hatab River, which was flooded and bisected the valley floor. The US II Corps only had time to deploy a small blocking force under Colonel Stark in the pass, consisting of one infantry battalion, one engineer battalion, one company of eight M3 medium tanks (Captain G. W. Meade's I Company, 13 AR), five M3 GMCs from the 894th Tank Destroyer Battalion and two towed 105mm howitzer batteries. Bülowius' first attempt around 1015 hours to force his way through Kasserine Pass was rebuffed by strong American artillery fire, and he was forced to wait until Hauptmann Hans-Günther Stotten's I./Pz. Regt 8 arrived before he could make another attempt. Yet even with tank support, the second DAK attack at 1530 hours only made minor gains and five tanks were knocked out by American anti-tank mines.[101] Rommel, who watched the attack, was not pleased. During the night of 19/20 February, Rommel was reinforced by Gruppo Bonfatti from the 'Centauro' division (which included the XVII Btgl. Carri M. with 22 M14/41), but Stark also received reinforcements, and Brigadier Charles A. L. Dunphie's 26th Armoured Brigade was moved to Thala, only 36 kilometres to the north. Dunphie detached a small column, known as Gore Force (including seven Valentines and four Crusaders from Major Anthony N. Beilby's C Squadron, 2L&BH), to support Stark's forces in Kasserine Pass.

Rommel attacked again on the morning of 20 February, but his infantry had difficulty securing the high ground that dominated the mouth of the valley. Rainy weather prevented the Luftwaffe from providing any support and Rommel did not have much artillery. He did have one battery of Nebelwerfer rocket launchers – the first time this weapon was used in North Africa. Rommel knew that he had to win quickly at Kasserine before more Allied reinforcements appeared, but he was forced to wait until the 10. Panzer-Division arrived in late afternoon. A second, more powerful attack was launched at 1630 hours, supported by Panzer-Artillerie-Regiment 90. While six battalions of Axis infantry relentlessly cleared the high ground, three armoured battalions (Hudel's I./Pz.Regt. 7, Stotten's I./Pz.Regt 8 and the Italian XVII Btgl. Carri M.) pushed along the valley floor. The American defence began to unravel when Italian tanks overran one engineer company and enemy tanks began to leak through the mine barrier. By 1700 hours, Stotten's Panzers achieved a breakthrough.[102] Once Colonel Stark's command post was overrun, the defence collapsed. Captain Meade's handful of M3 medium tanks and the 75mm GMC tank destroyers fought to block the enemy breakthrough, but were either destroyed or forced to retreat. When the two American artillery batteries displaced, the Axis armour surged forward, isolating two American infantry battalions on the high ground. The Italian tank battalion veered to the north-west toward the Bou Chebko Pass, while the German Panzers headed toward Thala. Only Gore Force stood in the way of the Panzers, but Beilby's C Squadron, 2L&BH was forced to conduct a hasty delaying action against a much superior force; Beilby was killed in action and all 11 British tanks were destroyed. Fortunately, darkness fell before the Germans could continue on to Thala.

Keightley's 6th Armoured Division sent additional elements of Dunphie's 26th Armoured Brigade to reinforce the Thala sector to replace the decimated Gore Force. Dunphie's battlegroup, dubbed 'Vicforce' (soon changed to 'Nickforce'), consisted of the rest of the 2L&BH and 17/21 Lancers (with 25 Valentines, 24 Crusader II/IIIs and six Crusader CS), two infantry battalions and some artillery and anti-tank guns. However, the rest of the 6th Armoured Division was committed to the defence of Sbiba and the French XIX Corps. Dunphie's battlegroup had already begun preparations to convert to the Sherman tank, sending a good number of crews back to Oran to pick up the new vehicles and receive training on them. Consequently, the armoured regiments that were sent to Thala were understrength and still equipped with the inferior Crusader and Valentine tanks, many of which were in poor mechanical condition.

Rommel was in a quandary at this point and uncertain which axis of advance to select. Although he had succeeded in breaking into the Kasserine Pass, it was clear that Allied reinforcements were already arriving in Thala and Tébessa, so reaching either objective would require tough fighting. It was also clear that von Arnim was not going to release the 21. Panzer-Division or s. Pz. Abt. 501 to Rommel, so the available strike force was limited to two *Panzer-Abteilungen* with a total of about 80 medium tanks. Von Arnim committed the 21. Panzer-Division against Sbiba on the morning of 19 February, but discovered that the town was stoutly defended when five tanks from Pz.Regt. 5 were knocked out by anti-tank guns. Thus, Hildebrandt's division was effectively sidelined for the next two days while Allied reinforcements continued to pour into Sbiba, including a provisional detachment of 25 Churchill tanks from the 142 (Suffolk) Regiment, Royal Armoured Corps.

Rommel unwisely decided to split his forces, simultaneously sending the Italian battlegroup and Kampfgruppe DAK to seize the Djebel Hamra Pass to reach Tébessa, while he sent the 10. Panzer-Division north to seize Thala. Yet even if these objectives were seized, it is unclear how this would significantly benefit the Axis cause in North Africa. On the Allied side, Fredendall complicated the defence by placing both Robinett's CCB and Stark's CCC under Dunphie's command, which was then transferred to Brigadier Cameron Nicholson from 6th Armoured Division (who was not present) – a ridiculously awkward command and control situation which ensured confusion and delayed communications.[103] Before dawn on 21 February, Robinett's CCB fought a successful meeting engagement against the German A.A. 3 east of the Djebel Hamra Pass; the terrain in this sector was broken and offered excellent cover for the defenders. It took Rommel a good portion of the day to organize his forces for a major assault – his subordinate commanders seemed unusually lacking in initiative – which did not begin until late afternoon. Around 1630 hours, the Italo-German Kampfgruppe attacked CCB, supported by ten Ju-87 Stukas, but came under intense American artillery fire. Gardiner's 2-13 AR had been partly re-equipped (he had a new M4 medium tank, named *Henry III*) and had been rushed to defend the Djebel Hamra Pass. By the time that the Axis finally attacked, Gardiner had his tanks in hull-down positions and had plentiful support from artillery and tank destroyers; he had no intention of charging into the open against enemy armour. After losing a number of armoured fighting vehicles to defensive fire, the Axis commanders decided to break off the action, which meant that Rommel's attack toward Tébessa had fizzled out.

During the night of 20/21 February, Brigadier Dunphie deployed Major Fiennes W. Strang-Steele's A Squadron, 17/21st Lancers as a covering force about 15 kilometres south of Thala. The British tanks occupied hull-down positions overwatching the long, asphalt road, but the terrain in this sector was fairly open and difficult to defend. Cactus groves offered some concealment, but not much. Around 0500 hours, three German eight-wheeled armoured

A German Pz IV Ausf G waits in a cactus grove in Tunisia, March 1943. Unlike the Western Desert, Tunisia offered far more cover and concealment for armoured units. (Author's Collection)

cars (Sd. Kfz. 233 with 7.5cm guns) approached and, using their excellent Zeiss binoculars, spotted Strang-Steele's tanks, which they proceeded to plaster with HE rounds. These Valentines, equipped with 2-pounder guns, lacked the range to hit back at the armoured cars. Soon, some of Hudel's I./Pz.Regt. 7 came up and he used his Pz IVs to knock out six British tanks with AP rounds. Major Strang-Steele was wounded and forced to fall back, with Hudel's Panzers following on his heels.[104] While the German force only consisted of about 30 tanks, Hauptmann Paul Pommée's II./Panzergrenadier-Regiment 69 (Gepanzert) in American halftracks and SPWs followed close behind, along with some self-propelled guns – it was a very professionally handled *Kampfgruppe*. Rommel was in an armoured car, behind the lead *Panzer-zug* (tank platoon), while von Broich rode nearby in a *Kubelwagen*.[105] For a few hours, he was the Rommel of old, urging his men onward, to make one final effort to reach their objective.

Dunphie was under heavy pressure all afternoon and obliged to fight a desperate delaying action; during that time, he had three tanks shot out from under him, but remained unwounded. Hudel had about six Pz IV Ausf G, but their long 7.5cm guns dominated the battlefield; the 17th/21st Lancers lost 14 of its 26 tanks. At 1530 hours, Hudel launched a major attack that split the British defence and Dunphie was forced to lay smoke and disengage. A good deal of the British infantry was lost – the Germans managed to take hundreds of prisoners.[106] However, Rommel had already left the front, leaving von Broich to continue the attack. With night falling, it seemed that the fighting for the day was over and the remaining British armour retired to an assembly area just south of Thala. Unknown to the British, Hudel's battalion had a captured Valentine tank, which they placed at the head of an armoured column trailing the British armour. Major Robert L. V. French-Blake's squadron from the 2L&BH was occupied with refuelling in the assembly area, and fatigue led to inadequate security. After the German column entered the British assembly area unchallenged, it suddenly opened fire with every weapon and streams of tracer fire splashed into targets at point-blank range. An ammunition truck was hit and exploded in a fireball. Although caught by surprise, the British tankers recovered quickly. Major George T. Ponsonby jumped into the nearest Valentine with one enlisted trooper and managed to knock out three German tanks at very close range. The chaotic close-quarter fighting in the assembly area continued for almost an hour before the Germans finally withdrew. Hudel had lost 14 tanks in the action and had few runners left. Dunphie's brigade lost a total of 38 tanks during the day and was reduced to just 12 operational Valentines.[107]

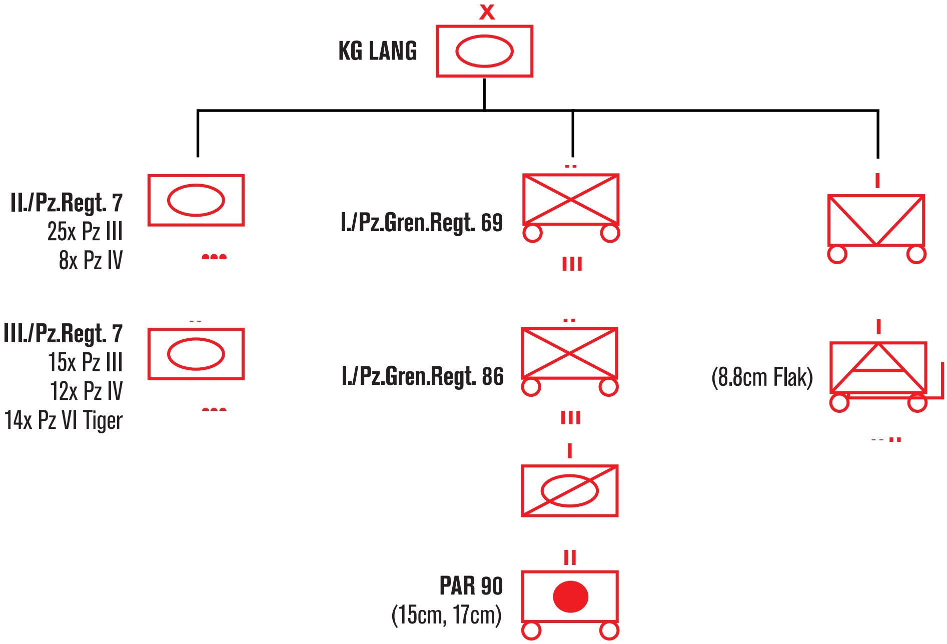
With Dunphie's brigade nearly combat ineffective, only a handful of tanks and infantry were left to hold Thala, but during the night significant reinforcements arrived. A detachment of the 16th/5th Lancers, re-equipped with Sherman tanks, arrived from Sbiba. Three battalions of field artillery (with 12 x 155mm and 24 x 105mm howitzers) from the US 9th Infantry Division also arrived, after an epic four-day, 1,200+ kilometre-long road march from Algeria. In pre-dawn skirmishing on 22 February, the 2L&BH lost seven more tanks, but this apparently convinced von Broich that the Allies were preparing a larger counterattack. Hudel's remaining Panzers needed repairs and were not up for another costly action, so von Broich pulled his tanks back. The Americans deployed their artillery and began pounding any German targets they could see, which led to a protracted artillery duel.[108] A steady cold rainfall dampened everyone's spirits, including Rommel's, who seemed to recognize that the opportunity for a rapid success had passed. Kesselring arrived at Rommel's command post in Kasserine Pass that afternoon and found him uncharacteristically passive, either from physical exhaustion, illness or despair.[109] Both Kesselring and Rommel agreed at 1415 hours to halt the offensive and withdraw from the Kasserine Pass area. Rommel had achieved a minor tactical victory at Kasserine Pass, mauling a few Allied battalions, but actually achieved remarkably little.

Ziegler's tactical victory at Sidi Bou Zid on 14–15 February was very well fought. McQuillin's initial faulty dispositions and piecemeal commitment of his two tank battalions led to a local disaster. Yet the Axis follow-up to the victory at Sidi Bou Zid was much less impressive. Sbeitla and the Kasserine Pass were taken, at some cost, but stiffening Allied resistance prevented any further exploitation. Indeed, the unexpected scale of the attack on the US II Corps led to a surge in reinforcements being transferred to Tunisia. Ward's 1st Armored Division, the 34th Infantry Division and Dunphie's 26th Armoured Brigade had taken heavy losses, amounting to over 6,000 troops (two-thirds of whom were captured) and about 150 tanks. Four Allied tank battalions – two American and two British – had been demolished, which would lead to improved tactics in the near future. Overall Axis losses were about 1,600 personnel and just 20 tanks (*Totalausfälle*). Ziegler and Rommel had drawn blood, but their success was ephemeral.

Over the course of 22–23 February, Rommel's forces withdrew from the Kasserine Pass, although the Anglo-American forces were slow to realize this and mounted no pursuit. A number of Axis AFVs were abandoned in the Kasserine Pass, indicating a rather hasty evacuation. With no reason to stay in this region, Rommel abandoned Gafsa and sent the DAK Kampfgruppe back to rejoin the Italo-German forces on the Mareth Line. Likewise, von Arnim pulled the 21. Panzer-Division back from Sbiba, even though the Allies had begun evacuating the town. After Kasserine Pass, it was clear that Rommel's authority was evaporating. Kesselring offered him command of the newly created Heeresgruppe Afrika, which was essentially a paper command with no staff. Generale Giovanni Messe finally took command of the ACIT forces at Mareth (including the DAK), which were now re-named the 1ª Armata. Von Arnim, still commander of 5. Panzerarmee, was nominally Rommel's subordinate, but he simply ignored him and reported directly to Kesselring.

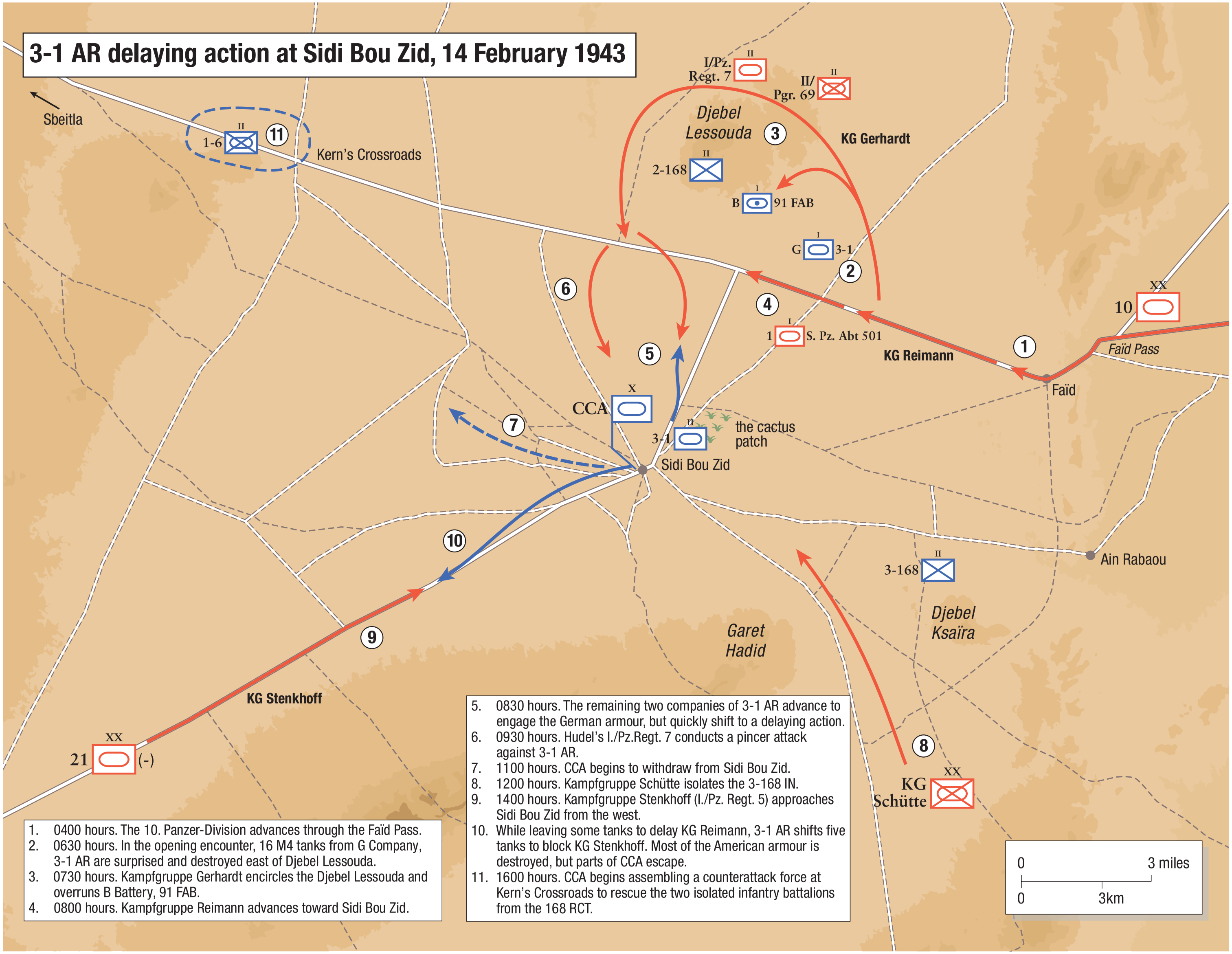
In Rome, the Commando Supremo was ecstatic about the Axis victories at Sidi Bou Zid, Sbeitla and Kasserine Pass, and seemed to believe not only that the US II Corps had been badly defeated but that Anderson had weakened

KAMPFGRUPPE LANG, 26 FEBRUARY 1943



Allfrey's V Corps by transfering large forces to defend Sbiba. In fact, Allfrey's V Corps now had two British infantry division (46, 78), a parachute brigade and significantly more artillery than it had a month prior. Based upon this misconception that Allied forces in northern Tunisia had been seriously weakened, the Commando Supremo authorized von Arnim on 23 September to conduct local harassing attacks to exploit the V Corps' vulnerable condition. Yet given the major logistic shortfalls facing 5. Panzerarmee, particularly in regard to fuel, even limited attacks needed to be carefully planned in order to conserve resources. Instead, von Arnim and his staff hastily cobbled together a plan in two days, designated as *Unternehmen Ochsenkopf* (Oxhead). Rather than a concentrated blow on a narrow sector, as in *Unternehmen Frühlingswind*, *Ochsenkopf* was cast as a series of nearly a dozen attacks spread across a 90km-wide front. Von Arnim intended to push Allfrey's V Corps back all along the front and capture the towns of Béja, Medjez el Bab and El Aroussa – which were incredibly ambitious goals. No pre-battle reconnaissance was conducted and units were hastily assembled, with little time for planning or preparation. When lower unit commanders asked for a delay, von Arnim ignored them.

The main strike group for *Unternehmen Ochsenkopf* was Korsgruppe Weber under Generalmajor Friedrich Weber, commander of the 334. Infanterie-Division. Korsgruppe Weber was subdivided into four



3-1 AR delaying action at Sidi Bou Zid, 14 February 1943

Sbeitla
1-6
11
Kern's Crossroads
I/Pz. Regt. 7
II/ Pgr. 69
Djebel Lessouda
3
KG Gerhardt
2-168
B
91 FAB
G
3-1
2
4
1
S. Pz. Abt 501
KG Reimann
1
10
XX
Faïd Pass
Faïd
6
5
CCA
X
7
3-1
the cactus patch
Sidi Bou Zid
10
9
KG Stenkhoff
21
XX
(-)
3-168
Ain Rabaou
Djebel Ksaïra
Garet Hadid
8
KG Schütte
XX
0
3 miles
0
3km

1. 0400 hours. The 10. Panzer-Division advances through the Faïd Pass.
2. 0630 hours. In the opening encounter, 16 M4 tanks from G Company, 3-1 AR are surprised and destroyed east of Djebel Lessouda.
3. 0730 hours. Kampfgruppe Gerhardt encircles the Djebel Lessouda and overruns B Battery, 91 FAB.
4. 0800 hours. Kampfgruppe Reimann advances toward Sidi Bou Zid.
5. 0830 hours. The remaining two companies of 3-1 AR advance to engage the German armour, but quickly shift to a delaying action.
6. 0930 hours. Hudel's I./Pz.Regt. 7 conducts a pincer attack against 3-1 AR.
7. 1100 hours. CCA begins to withdraw from Sidi Bou Zid.
8. 1200 hours. Kampfgruppe Schütte isolates the 3-168 IN.
9. 1400 hours. Kampfgruppe Stenkhoff (I./Pz. Regt. 5) approaches Sidi Bou Zid from the west.
10. While leaving some tanks to delay KG Reimann, 3-1 AR shifts five tanks to block KG Stenkhoff. Most of the American armour is destroyed, but parts of CCA escape.
11. 1600 hours. CCA begins assembling a counterattack force at Kern's Crossroads to rescue the two isolated infantry battalions from the 168 RCT.

Kampfgruppen, with most of the armour in Kampfgruppe Lang (led by Oberst Rudolf Lang, commander of Panzergrenadier-Regiment 69). The second company of Major Hans-Georg Lüder's s.Pz.Abt. 501 had arrived in Tunisia and was united with the first company, which altogether possessed 14 operational Tigers, 15 Pz III and 12 Pz IV medium tanks. Although intended as a corps-level asset, Lüder's battalion was re-designated as III./Pz.Regt. 7. In addition to Lüder's battalion, Hauptmann Rolf Burk's II./Pz.Regt. 7 was assigned to Kampfgruppe Lang with 25 Pz III and eight Pz IV, along with one *Panzergrenadier-Bataillon*, one artillery battalion, an engineer detachment and some armoured cars. Indeed, Kampfgruppe Lang, with a total of 74 tanks, was probably the strongest German armoured battlegroup ever assembled in North Africa. Yet Lang was an odd choice to lead an armoured strike force, having spent most of the interwar period in the Landespolizei and then the first three years of the war commanding a *Panzerjäger-Abteilung* in the 1. Gebirgs-Division. While he had been awarded the Ritterkreuz for his service in the Caucasus, Lang had very little experience with tanks or combined arms warfare. Considering that most of the armour in Kampfgruppe Lang belonged to Oberst Rudolf Gerhardt's Pz.Regt. 7, it seems incredible that the far more experienced Gerhardt was not chosen to lead this armoured strike force.

Anderson had assigned the British 128th Brigade to defend the Béja sector. The main line of resistance was established at Hunt's Gap, 14 kilometres north-east of Béja with two infantry battalions (1/4 and 2/4 Hampshires). In order to delay any rapid enemy advance down the road from Mateur, Lieutenant Colonel Horace C. C. Newnham's 5th Battalion Hampshires was deployed 29 kilometres north-east of Béja, near the Sidi Nsir train station. Newnham's battalion, an inexperienced TA unit, had occupied this position for three weeks, giving it adequate time to lay mines on the roads and establish observation posts (OPs) on several of the surrounding hills. Since the battalion only had three organic 2-pounder anti-tank guns, it was reinforced with the 155th Battery (eight 25-pounder guns). Sidi Nisr was essentially a reinforced forward combat outpost, intended to slow an advancing enemy and force them to deploy.

Kampfgruppe Lang approached Sidi Nsir from due east on the morning of 26 February, around 0500 hours, with the intent of brushing aside this outpost position and then driving on to Béja. Captain J. H. Lytle's B Company, 5th Hampshires was watching the road to the east and came under enemy mortar fire at 0630 hours. Thirty minutes later, the Germans tried to push down the road with three tanks, but their lead tank ran into the minefield and was knocked out by a 25-pounder with AP rounds from a distance of less than 400 metres. The British artillery was not in any way concealed, but was simply deployed alongside the road, with four guns on the north side and four on the south side. One gun was dedicated to the anti-tank mission, overwatching the mine obstacle, but the other seven guns were assigned to fire HE rounds. After the tanks were stopped at the obstacle, Lang sent his *Pioniere* detachment to clear the mines, but they were all mown down by British machine-gun fire. Lang then:

> gave the order for the I./Pz.Gren.-Regt. 86 to detruck and proceed on foot making a detour to the south around the mountain range … to break through to the road Sidi Nsir–Ksar Mezouar, and … to roll up the enemy front in [the] direction toward Sidi Nsir. I was well aware of the fact that this movement would cost precious hours.[110]

Not only was Kampfgruppe Lang stopped by a simple obstacle, but he made the amateurish mistake of allowing his battlegroup to become bunched up and stationary on the road, exposed to bombardment. A heavy rain was falling and the ground was very muddy, which hindered off-road movement, but his tanks were still capable of manoeuvreing. The British OPs in the surrounding hills were not only able to call down 25-pounder HE artillery barrages on the stalled column, but even some long-range missions from their divisional medium artillery. Kamfgruppe Lang pulled back most of its forces to avoid the artillery fire, but this squandered most of the morning awaiting the *Panzergrenadiers* to outflank the British position. For some reason, Lang did not bring his own artillery battalion into play to suppress the British 25-pounders or lay down smoke to support a breach attempt on the minefield. Instead, Lang relied on an attached group of Fallschirmjäger to suppress some of the British positions with mortars and machine-guns.

It was not until 1400 hours that Kampfgruppe Lang made another serious attempt to fight its way past Lytle's B Company, using one Tiger tank and two Pz IV medium tanks. All three tanks were knocked out by the British artillery. By 1500 hours, the Panzergrenadiers had reached the road south of Sidi Nisr, isolating Newnham's battalion, but Lang was not ready to mount a serious attack until 1700 hours. Gradually, the Germans wore down B Company and a company of medium tanks was able to manoeuvre about 300–400 metres south of the road in order to get into better positions to engage the British 25-pounders. At this point, under a heavy rain and with the light beginning to fade, the German tanks surged forward, with one company moving cross-country and another down the road, with some Tigers. The British artillery continued firing, claiming several tanks knocked out, until each gun was eliminated. By 1800 hours, the British defence east of Sidi Nisr had been crushed and German tanks were advancing toward Newnham's command post. With no means left to resist tanks, Newnham ordered his battalion to fall back to Hunt's Gap; roughly 129 survivors reached British lines the next morning. Eventually, British media reports lionized Newnham's defence and claimed that up to 40 of Lang's tanks were damaged or destroyed at Sidi Nsir.[111] In fact, both sides had not performed very well at Sidi Nsir. Lang proved incapable of organizing a simple breach operation under fire (unlike the II./Pz.Regt. 5 breach at Tobruk on 14 April 1941), where the enemy had only a thin belt of anti-tank mines and some

The German attack at Hunt's Gap on 27 February 1943 was a fiasco. Seven Tiger tanks were lost in the battle, including Tiger 142, which was disabled and then blown up by the retreating Germans. (Author's Collection)

barbed wire, but no anti-tank ditch and no 6-pounder anti-tank guns. Thereafter, Lang proved incapable of coordinating a combined arms attack and relied on a plodding, eight-hour-long infantry attack to unhinge the British defence. On the British side, Newnham's battalion and the artillerymen conducted a brave but unimaginative defence. Three of the four British infantry companies sat out most of the action, and Newnham made little effort to shift his reserve company to block the enemy flank attack or keep the road to Hunt's Gap open. Newnham clearly accomplished his mission, but there was no reason to have lost most of his battalion against such a slow-moving opponent.

Kampfgruppe Lang resumed its advance south toward Béja on the morning of 27 February, led by armoured cars, but was hindered by continued heavy rains and British minefields. At least one Tiger tank was damaged by a mine and four others fell out for mechanical reasons. British forward observers managed to call down artillery fire missons on the slow-moving column for much of the day, which gave the British 128th Brigade ample time to prepare an anti-armour ambush near Hunt's Gap (Kzar Mezouar), with the 2/4th Battalion Hampshires supported by 6-pounder anti-tank guns and three regiments of field artillery. Mines were laid on the expected avenues of approach. In addition, two squadrons of Lieutenant Colonel David Dawney's North Irish Horse (25th Army Tank Brigade), equipped with 25 Churchill tanks, reached Hunt's Gap by 0900 hours on 27 February after a gruelling 150km-long roadmarch, conducted at night along winding roads during a heavy rain.[112] However, Kampfgruppe Lang had great difficulty breaching the enemy mine obstacles because it could not suppress the British artillery.[113] Off-road movement was also extremely difficult due to deep mud. Von Arnim was incensed that Kampfgruppe Lang – his main strike force – was still 18 kilometres from Béja and ordered Lang to mount a major assault by the next morning. During the night of 27/28 February, the Germans cleared some of the mine barriers, and Panzergrenadiers crept toward Kzar Mezouar station in order to occupy jump-off positions for an early morning assault.

Dawney's North Irish Horse (NIH) pulled both its squadrons back 4 kilometres during the night in order to refuel, but then moved forward before dawn to re-occupy battle positions in an area dubbed 'the Loop', just north-east of Kzar Mezouar station. Major William H. Ketchell, leading A Squadron, stumbled into the sights of a German anti-tank gun which had moved forward and his tank was hit at close range, wounding him. The rest of

A Squadron and Major John Rew's B Squadron moved into their hull-down positions to await the expected enemy attack.[114] Unlike Sidi Nsir, the supporting British artillery was deployed away from the road and camouflaged. Despite von Arnim's orders, Lang was unable to mount an attack until early afternoon. The initial advance consisted of a few tanks coming straight down the road, since thick mud still inhibited off-road movement; the heavy Tigers were particularly sluggish in deep mud. A Tiger tank, No. 142, was in the lead. Lieutenant W. R. Hern, a troop leader in B Squadron, fired at the Tiger at a range of 500–600 metres and penetrated its turret with a 6-pounder AP round – the first Tiger knocked out by an Allied tank.[115] Kampfgruppe Lang finally mounted a determined attack around 1400 hours, but the tanks encountered mines and many were knocked out or disabled by intense defensive fire. Major Lüder was among those wounded. The British medium artillery (15 140mm guns) played a particularly important role in smothering the attack. Lang attempted another effort just before dusk, but this was also repulsed by artillery and anti-tank fire. After dark, British reconnaissance parties were surprised to find six German tanks abandoned, including some stuck in the mud. Later, British sappers blew them up. Kampfgruppe Lang had been badly defeated, although this was not obvious until the next day. Altogether, in three days Lang had lost seven Tigers, eight Pz IV and 19 Pz III, with 33 other tanks damaged; only two Tigers, two Pz IV and three Pz III were still operational.

As part of *Unternehmen Ochsenkopf*, von Arnim conducted a secondary attack with Kampfgruppe Schmid north of Bou Arada, 40 kilometres south-east of Hunt's Gap, with the intent of reaching the road junction at El Aroussa. Two battalions of German Fallschirmjäger, along with 11 tanks from 6./Pz.Regt. 7, were the spearhead intended to seize the Bir El Krima Pass and then push south to El Aroussa, thereby bypassing the main British defences around Bou Arada. The sector around Bir El Krima was only defended by the 6th Commando (about 250 light infantrymen) and some reconnaissance troops. Starting before dawn on 26 February, the German assault group moved rapidly west, with a company of Fallschirmjäger riding on the tanks and the rest following in trucks. The German Panzers were able to seize the pass by 1000 hours, inflicting heavy losses on the Commandos, but the remaining British troops continued to put up stiff resistance and called for support. Around 1300 hours, C Squadron from the 142nd (Suffolk) Regiment Royal Armoured Corps (142 RAC) appeared and began to engage 6./Pz.Regt. 7 at a range of about 1,000 metres. The action was unusually long – lasting four hours.[116] Although the German medium tanks scored numerous hits on the Churchill tanks, they failed to knock any out. In contrast, the British knocked out seven German tanks and damaged two others, leaving only two operational. Bir El Krima proved to be a surprisingly one-sided victory for the Churchill tanks, particularly since the British tankers were novices who had just arrived in theatre.

The next day, 28 February, the local British commander ordered Major E. W. H. Hadfield's A Squadron, 51 RTR (nine Churchills) and a company of infantry to probe north along the El Aroussa–Medjez el Bab road to clear up the enemy penetration in this sector. By this point, Kampfgruppe Schmid had brought up several anti-tank guns and two 8.8cm Flak guns to occupy a blocking position at Steamroller Farm (9.5km north-east of El Aroussa). The lead troop of Churchills, led by Captain Darry Hollands' *Adventurer*, advanced cautiously along the track and came face-to-face with an 8.8cm Flak gun, which was destroyed before it could react. Soon afterwards, Hollands encountered a second 8.8cm Flak gun, which he silenced with his coax machine-gun after the German gunners had merely creased his turret with a near miss. Although under intense German defensive fire, which damaged several A Squadron tanks, Captain Hollands charged forward with his Churchill to overrun some German infantry positions, along with one other Churchill commanded by Lieutenant J. G. Renton. At that point, the Germans committed their last two Pz III tanks from the 6. Kompanie, but Lieutenant Renton destroyed both tanks. German anti-tank guns managed to destroy three Churchills before Hadfield broke off the action around 1800 hours, but the Churchill attack had succeeded in eliminating the threat to El Aroussa.[117] *Unternehmen Ochsenkopf* had proved to be a complete fiasco, which failed to capture any of its primary objectives and which cost 5. Panzerarmee 75 tanks destroyed or damaged.

Typically, military histories that discuss Tunisia in February 1943 focus on the Battle of Kasserine Pass and emphasize this action as a major defeat for the US Army and Rommel's last victory in North Africa. Martin Blumenson was one of the first to describe Kasserine as 'a disaster for the US Army'.[118] The British – beginning with General Sir Harold Alexander – were quick to use the setbacks at Sidi Bou Zid to cast aspersions on the fighting quality of American troops, which lingered long after the events.[119] In contrast, the failure of *Unternehmen Ochsenkopf* barely merits a paragraph or two in most histories. Furthermore, the casualty figures for the main actions in February are surprisingly slippery and even the official US Army history only mentions German claims – not actual Allied losses.[120] Finally, there was a tendency in some quarters to suggest that defeat at Kasserine Pass delayed the final Allied victory in Tunisia. Yet upon examining the available facts, many of the accepted notions about the Battle of Kasserine Pass seem deeply flawed and influenced by subjective interpretations.

First of all, while part of the US II Corps was defeated at Sidi Bou Zid and Sbeitla – by Gruppe Zeigler – a mixed Anglo-American force in Kasserine Pass succeeded in preventing Rommel from reaching any of his intended objectives. If Rommel did not reach Thala or Tébessa, how could his attack at Kasserine Pass be described as a victory? In fact, Kasserine Pass was clearly an Allied defensive victory (albeit a close one) and a dejected Rommel withdrew in despair. German sources claim to have destroyed 235 Allied tanks in the period 14–22 February 1943. Allied sources indicate 92 American tanks lost at Sidi Bou Zid, nine at Sbeitla, another nine at

Kasserine Pass and a few more in various places; altogether about 115 medium tanks. According to 1st Armored Division records, US tank strength in Tunisia went down by about 100 medium and nine light tanks in this period.[121] British tank losses were 38 at Kasserine Pass, four at Sbiba and fewer than ten in the V Corps sector, totalling about 50. German tank losses (*Totalausfälle*) were about 20 in the II Corps sector but about 75 in the V Corps sector. In other words, during February 1943, the three German local offensives knocked out a total of about 170 Allied tanks, while losing 95 of their own. Given that dozens of German tanks were also damaged and few repair parts were available, the offensive cost 5. Panzerarmee far more than it gained. In contrast, Allied armoured strength in Tunisia was rapidly growing (1st Armored Division received 100 new M4 medium tanks by 3 March, 6th Armoured Division was re-equipping with Shermans), whereas Axis armoured strength was in decline due to the heavy losses suffered in *Ochsenkopf*. While it is true that the US II Corps took a significant beating in the period 14–20 February, these setbacks had no impact on Montgomery's pending breakthrough attack at Mareth. Tunis would fall only ten weeks after the German attack on the US II Corps, so it is difficult to see how the setbacks at Sidi Bou Zid and Sbeitla caused any great delay in that outcome.

In terms of tactics, the February fighting in Tunisia amply demonstrated the impractibility of the US Army's tank destroyer doctrine. Experience in North Africa in 1941–42 had already proven that dismounted towed anti-tank guns were a greater threat to tanks than guns mounted portee on trucks or halftracks, but the US Army failed to learn from British experience. The dispersion of the 1st Armored Division also prevented II Corps from properly employing combined arms tactics on the battlefield, which led to defeat in detail; this actually proved the easiest problem to rectify. Fredendall's command performance was abysmal – also easy to rectify. While much commentary has been spent criticizing American combat performance in the February fighting, German combat performance varied from excellent to mediocre. Beginning at the top, von Arnim chose to commit his armour into sectors with very little regard for traditional military METT-W analytic factors (mission-enemy-terrain-time available-weather). Aside from Sidi Bou Zid, the German armour was committed into action in sectors with poor trafficability during periods of heavy rains. In particular, the Tiger tanks were often sent along narrow tracks where they could not even get off the road. The performance of British and American artillery, as well as mine-laying engineers, was particularly decisive in stopping most of the German armoured attacks in February – which was only made possible because the enemy foolishly opted to attack along narrow, predictable mobility corridors. On both sides, tactical problems were created by higher-level commanders who failed to coordinate properly and allowed personal animosities and biases to influence their decision-making.

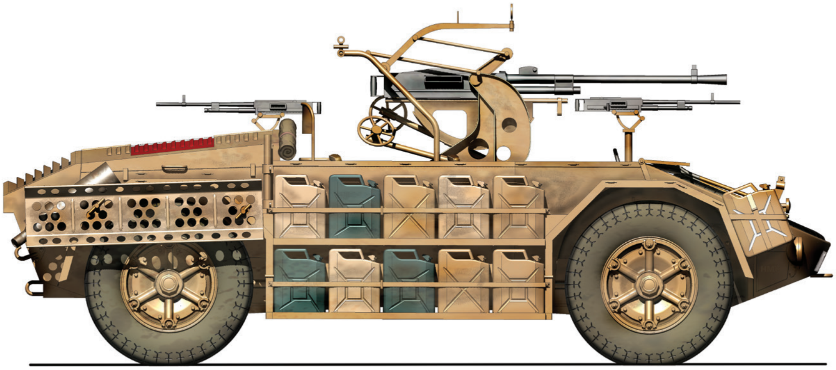
CHAPTER 5:
LAST STAND OF THE AFRIKA KORPS

MONTGOMERY AND PATTON STRIKE: MARCH 1943

'We'll win the war, with the M4'

US Army slogan, 1942–43 [1]

As the two main Allied armies began to converge on the Axis forces in Tunisia – Anderson's 1st Army from the west and Montgomery's 8th Army from the south-east – the decision was made to form a new command structure to coordinate their operations. Thus, Alexander became the head of the 18th Army Group. Alexander was inclined to believe that American troops had performed poorly in the Battle of Kasserine Pass and recommended personnel changes in the US II Corps. After some hesitation, Eisenhower finally decided to relieve Fredendall from command on 5 March. However, his first choice to replace Fredendall was the 49-year-old Major General Ernest Harmon, commander of the 2nd Armored Division. After Harmon rejected the offer, Eisenhower turned to the 57-year-old Patton with the assignment, which he accepted. Although easily the most experienced senior armour leader in the US Army – and the only one with previous combat experience – Patton was regarded by Eisenhower and his staff as wild and eccentric. Nevertheless, Patton arrived at II Corps headquarters on 6 March 1943 and took command. He found discipline poor among many troops, and a lack of aggressive spirit – which he intended to immediately rectify. Soon thereafter, Patton was informed by Anderson that he was expected to



The Italian SPA-Viberti AS.42 *Sahariana* reconnaissance vehicle, which was introduced in November 1942, was well-suited to the desert terrain in North Africa. (© Osprey Publishing Ltd by Henry Morshead. From NVG 261 *Italian Armoured & Reconnaissance Cars 1911–45*)

mount a diversionary attack against the Afrika Korps within ten days, in order to distract the Axis while Montgomery prepared to mount his main attack to breach the Mareth Line. As a result of the Battle of Kasserine Pass, the II Corps had been significantly reinforced, providing Patton with the ability to launch a local attack in the Gafsa–Maknassy sector with two divisions (1st Armored and 1st Infantry). The operation would begin on 16 March, in the hope of drawing Axis reserves away from the Mareth Line.[2]

Rommel was left in an ambiguous situation after Kasserine Pass, with Messe officially in charge of the 1ª Armata. The Mareth Line, which blocked the direct approach along the coast to Gabès and Sfax, had originally been built by the French in 1936–39. French engineers had sited the line behind the deep Wadi Zigzaou, which was up to 60 metres wide and 20 metres deep in places – a natural anti-tank ditch. However, Wadi Zigzaou did not extend all the way across the open plain to the nearest high ground, the Matmata Hills in the west, which obliged the French to create 26 strongpoints across a 45km-wide front. A total of eight concrete artillery bunkers and 40 infantry casemates were built prior to the French armistice in 1940, after which the line fell into disrepair. Once Axis forces entered Tunisia in November 1942, a small engineer group was sent to improve the Mareth Line and during the winter of 1942–43 they began laying mines and digging more anti-tank ditches in anticipation of creating a fortified refuge for the defeated Afrika Korps. Yet when Rommel first inspected the Mareth Line, he did not find it a particularly impressive defensive position and preferred to make a stand further north, at Wadi Akirit, where the terrain was more restrictive due to large salt marshes on the western flank. In this case, Rommel's appreciation of the terrain was correct, but the Commando Supremo had enough of his preference to keep giving up ground without a fight and insisted that the 1ª Armata would hold at the Mareth Line.

By early March 1943, the Mareth Line was held by the Italian XX and XXI Corps, with a total of four Italian and two German infantry divisions. Rommel was able to place over 600 anti-tank guns (two-thirds of which were Italian) and 78 8.8cm Flak guns in the line, but his forces were weak in field artillery, which did not bode well in the defence. Engineers laid about 100,000 anti-tank

Brigadier George 'Pip' Roberts, commander of the 26th Armoured Brigade during the final offensive in Tunisia, talks with his division commander, Major General Charles F. Keightley. Roberts was one of the best British armoured brigade commanders in the North African campaign. (BH, BHC 01552)

and 70,000 anti-personnel mines in front of the line, which were well covered by fire. However, the defences on the west end of the line near the Matmata Hills were not as formidable and likely to be turned. Furthermore, there was a possibility that Montgomery might attempt a wide envelopment through the Tebaga Gap to get behind the Mareth Line, so an anti-tank ditch and 18,000 mines had to be allocated to cover against that eventuality.[3] In terms of mobile reserves, Messe had the DAK, under General der Panzertruppe Hans Cramer (the former commander of Pz.Regt. 8), which consisted of the 15. and 21. Panzer-Divisionen with a total of about 102 tanks, plus the Italian Raggruppamento Sahariano Mannerini.

Generale Alberto Mannerini had been tasked with forming the remaining Italian reconnaissance units into a new battlegroup, known as Raggruppamento Sahariano Mannerini. The group had roughly 2,500–3,000 assigned personnel and included a small number of L6 light tanks, AB41/42 armoured cars, Semovente 47/32 self-propelled anti-tank guns, several battalions of motorized infantry and about 30 field guns. However, the core of the battlegroup was formed by seven *compagnie sahariane*, trained and equipped to operate in the deep desert. In November 1942, the Regio Esercito received a new piece of equipment – the 4.5-ton, four-wheel-drive SPA-Viberti AS.42 reconnaissance vehicle. For once, Italian industry had produced a superb piece of equipment that was superior to anything fielded by the other three armies in North Africa. The Viberti AS.42 was optimized for desert warfare, with excellent mobility and range over rough terrain, which meant that it could go places that tanks could not go and was capable of independent operations. Although unarmoured, the Viberti AS.42 could hide in defilade thanks to its low profile and it had decent firepower – typically either a 20mm autocannon or a 47mm anti-tank gun. Mannerini received about two dozen of the SPA-Viberti AS.42 to equip his Saharan companies, which also possessed excellent armed AS.37 light trucks. Raggruppamento Sahariano Mannerini was assigned to act as an operational-level reserve, in case the British tried an out-flanking manoeuvre through the Tebaga Gap.

While Messe's 1ª Armata was improving its defences at Mareth, Montgomery's pursuit slowed to a crawl after the capture of Tripoli. Although the vanguard of the 8th Army crossed into south-east Tunisia on 4 February, the bulk of Montgomery's forces remained around Tripoli, resting and refitting. Most of the armoured regiments received replacements, including some new commanders. Until the port of Tripoli was repaired – and it was badly damaged by German demolitions before their exit – the 8th Army's logistic situation was constrained, since most supplies were still coming forward by truck from Benghazi. Consequently, Montgomery could initially continue his pursuit into Tunisia with elements of just two divisions (7th Armoured and the 51st Highland) under Leese's XXX Corps. Since Major General John Harding, commander of the 7th Armoured Division, had been wounded by artillery fire just prior to the capture of Tripoli, Montgomery decided to replace him with George Erskine, a senior staff officer in the XIII Corps. Erskine was an infantry officer with limited command experience and none at all with tanks or combined arms warfare. Brigadier 'Pip' Roberts, commander of the 22nd Armoured Brigade and one of the best armour commanders in the 8th Army, was sent off to Tunisia to take command of Dunphie's 26th Armoured Brigade (Dunphie was sent to AFH as an armour advisor and held no more field commands, despite his very creditable performance at Thala). In Roberts' place, Brigadier William R. N. Hinde took over the 22nd Armoured Brigade; 'Looney' Hinde was a 42-year-old cavalry officer who had spent most of the war in England. After El Alamein, Montgomery became extremely risk-averse in his command style and did not want his armour commanded by overly adventurous officers. From hereon, Montgomery intended to reduce the risks to his armour and rely upon artillery and air power to smash enemy defences.

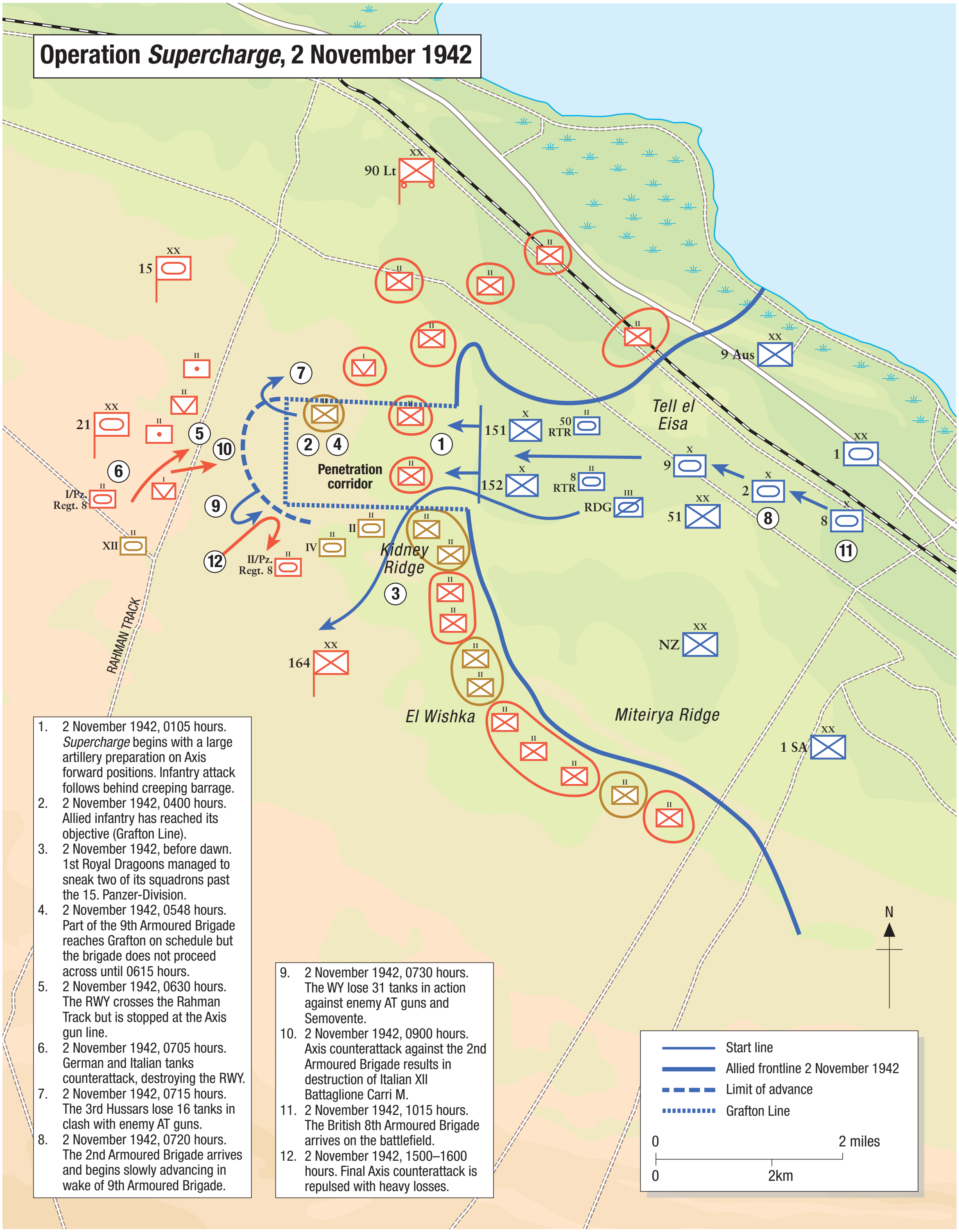
On 16 February, the 8th Armoured Brigade and one infantry brigade from the 51st Highland Division captured the airfield at Ben Gardane. Erskine cautiously sent Hinde's 22nd Armoured Brigade westward, along with the 131st Infantry Brigade, where it encountered no enemy resistance in the town of Medenine, only 36 kilometres south-east of the Mareth Line and 265 kilometres from Tripoli. However, the Axis had deployed a blocking force in the Tadjera Hills, just north-west of Medenine, which covered the primary approach to the Mareth Line. On 20 February, Hind sent Hutton's 5 RTR and Scott's 4 CLY on a turning movement to outflank the enemy blocking force. After a brief action in which two British tanks were knocked out and a few German guns overrun, the Axis blocking force abandoned the Tadjera Hills and fell back to the Mareth Line.[4] Afterwards, the 131st Infantry Brigade occupied defensive positions in the Tadjera Hills. Despite this success, the armoured regiments were significantly understrength and needed a period of refitting; for example, the 4 CLY had 41 of its authorized 56 tanks (19 Crusader and 22 Shermans), while 3 RTR had 46 tanks (17 Crusader, 28 Shermans and one Lee).[5] Furthermore, the available tanks were a heterogenous lot, with Crusader II and IIIs, petrol-powered Shermans and diesel-powered Sherman IIIs, which meant three different types of main gun ammunition and two different types of fuel. After taking Medenine, Hinde's brigade had to wait for the rest of Leese's XXX Corps to catch up, and in the meantime the armour was used as a covering force.

Rommel was quick to notice that the British had only reached Medenine with a couple of brigades and then stopped for over a week. He saw this as one last opportunity to achieve a tactical victory in North Africa before returning to Europe. On 28 February, he called a conference at Wadi Akirit with all the senior Axis field commanders to discuss his proposal for another counterattack. First, Rommel stated his assessment that the Mareth Line would not be able to withstand a full-scale assault by the 8th Army, which was expected within about two weeks. Second, he proposed a spoiling attack to inflict sufficient damage upon the British to delay their offensive against the Mareth Line. Normally a spoiling attack is a good idea when conducting an active defence, but it is usually designed with economy of force in mind, seeking to achieve its objective with the minimum necessary combat power. Instead, Rommel quickly transformed his idea for a small-scale local counterattack into a large-scale counteroffensive requiring the use of all three Panzer-Divisionen in Tunisia. He boldly proposed to mount a double pincer attack against the British forces at Medenine, then a subsequent push to Ben Gardane to shove the 8th Army back on its heels.[6] However, Ziegler (representing von Arnim), Messe and the three Panzer-Divisionen commanders were not sanguine about Rommel's concept and after five hours of debate no decision was reached. Frustrated and with his health deteriorating, Rommel was in no mood to argue and simply turned the planning for the counteroffensive over to Ziegler and Messe. The result was a series of compromises which satisfied nobody. Instead of Rommel's double pincer attack, Messe simplified the plan and shifted the main effort toward the south, with all three Panzer-Divisionen attacking essentially along one main axis. The plan was designated as Operation *Capri*.

Rommel wanted to attack at Medenine as soon as possible, but the transfer of the 10. Panzer-Division consumed several days, as well as plenty of scarce fuel. Thanks to ULTRA signal intercepts, Montgomery was forewarned that the Axis were planning a counterattack at Medenine and he was able to rush additional elements of Leese's XXX Corps forward in time. Leese established a deliberate defence across a 30km-wide front, with the 5th New Zealand Brigade on the left defending Medenine, the 201st Guards

The first 17-pounder anti-tank guns reached North Africa in time for the Battle of Medenine in early March 1943. The 17-pounder could defeat all Axis armour, including the Tiger tank. (Author's Collection)

Operation *Supercharge*, 2 November 1942


90 Lt
15
21
I/Pz. Regt. 8
XII
II/Pz. Regt. 8
IV
II
164
RAHMAN TRACK
Penetration corridor
Kidney Ridge
El Wishka
Miteirya Ridge
151
50 RTR
152
8 RTR
RDG
Tell el Eisa
9 Aus
9
2
8
1
51
NZ
1 SA
①
②
③
④
⑤
⑥
⑦
⑧
⑨
⑩
⑪
⑫
N
Start line
Allied frontline 2 November 1942
Limit of advance
Grafton Line
0
2 miles
0
2km

1. 2 November 1942, 0105 hours. *Supercharge* begins with a large artillery preparation on Axis forward positions. Infantry attack follows behind creeping barrage.
2. 2 November 1942, 0400 hours. Allied infantry has reached its objective (Grafton Line).
3. 2 November 1942, before dawn. 1st Royal Dragoons managed to sneak two of its squadrons past the 15. Panzer-Division.
4. 2 November 1942, 0548 hours. Part of the 9th Armoured Brigade reaches Grafton on schedule but the brigade does not proceed across until 0615 hours.
5. 2 November 1942, 0630 hours. The RWY crosses the Rahman Track but is stopped at the Axis gun line.
6. 2 November 1942, 0705 hours. German and Italian tanks counterattack, destroying the RWY.
7. 2 November 1942, 0715 hours. The 3rd Hussars lose 16 tanks in clash with enemy AT guns.
8. 2 November 1942, 0720 hours. The 2nd Armoured Brigade arrives and begins slowly advancing in wake of 9th Armoured Brigade.
9. 2 November 1942, 0730 hours. The WY lose 31 tanks in action against enemy AT guns and Semovente.
10. 2 November 1942, 0900 hours. Axis counterattack against the 2nd Armoured Brigade results in destruction of Italian XII Battaglione Carri M.
11. 2 November 1942, 1015 hours. The British 8th Armoured Brigade arrives on the battlefield.
12. 2 November 1942, 1500–1600 hours. Final Axis counterattack is repulsed with heavy losses.

Brigade anchoring the centre on the Tadjera Hills and the 131st and 154th Infantry Brigades holding the right; altogether, 11 infantry battalions were deployed on the main line with five more battalions in depth. Hinde's 22nd Armoured Brigade was the main armoured reserve, with Brigadier Charles B. C. Harvey's 8th Armoured Brigade nearby. Montgomery intended to repel the expected enemy armour attack with firepower, so he deployed over 460 anti-tank guns (including a few of the new 17-pounder anti-tank guns) and 350 artillery pieces in the Medenine sector. The initial batch of 17-pounders were mounted on 25-pounder gun carriages and called 17/25 pounders, and since their existence was still secret, they were referred to as 'Pheasant Guns'. The 17-pounder anti-tank gun could defeat any enemy tank, including the Tiger; its standard 7.7kg AP projectile had a muzzle velocity of 884m/s and could penetrate up to 105mm of RHA at 2,000 metres. An APCBC round was also available for the 17-pounder, which could achieve similar results against the German FHA (*Zusatzpanzerung*). The British armour, which comprised about 300 tanks, was to be kept back in mobile reserve.[7] The Desert Air Force was also able to provide ample air support from its new bases.

The basic scheme of manoeuvre for Operation *Capri* was that the 15. and 21. Panzer-Divisionen would attack east along the Toujane–Medenine road, then pivot to attack north-east to Koutine. At the same time, von Broich's 10. Panzer-Division would move through the Hallouf Pass to attack toward Medenine from the south-west. Although this was the first and only time during the campaign in North Africa that the Afrika Korps would employ three Panzer-Divisionen in a concerted attack, all were in a very depleted condition, with less than half their authorized vehicles.[8] Altogether, the three Panzer-Divisionen possessed about 141 operational tanks (35 in 10. Panzer-Division, 52 in 15. Panzer-Division and 54 in 21. Panzer-Division), the majority of which were Pz IIIs. General der Panzertruppen Hans Cramer, former commander of Pz.Regt. 8, was promoted and given command of the DAK even though he had been away from North Africa for some time and had never even commanded a division. Even worse, Cramer arrived in Tunisia on 5 March, the day before Operation *Capri* was to commence. Despite all these negative factors, Messe and Ziegler were able to assemble a combined arms assault formation that would be assisted by artillery and some close air support sorties.

At 0600 hours on 6 March, all three Panzer-Divisionen began advancing east toward Medenine. Visibility was poor due to ground fog, which meant that the German units could not observe the British positions. Nevertheless, the British infantry could hear the rumble of German tank engines approaching and were fully alert. Despite the poor visibility, the Germans fired an artillery preparation, which included two battalions of 21cm Nebelwerfer rockets from Werfer-Regiment 71 and a battery of 17cm long-range guns. On the left, Borowitz's

15. Panzer-Division advanced through the fog with Hauptmann Stotten's I./Pz.Regt. 8 in the lead, advancing in a wide *Breitkeil*, followed by Hauptmann Wolfgang Schnelle's II./Pz.Regt. 8 and then Panzergrenadier-Regiment 115. The area in front of the rocky high ground occupied by the British infantry was flat but bisected by several wide *wadi*s, which hindered movement and forced the Germans to shift to columns when crossing. After crossing the Wadi Negueb, Pz.Regt. 8 split into two columns, with one column veering left toward the 1/5 Queens and the other column advancing straight at the 1/7 Queens. One German *Panzer-Kompanie* imprudently proceeded in file up a dirt track toward Koutine. The 1/7 Queens had 12 6-pounder guns deployed, but it was a single gun under Sergeant Richard I. Andrews which opened the engagement at a range of under 400 metres; he put five 6-pounder rounds into one Pz III, knocking it out, then switched to the others. In a matter of minutes, Andrews knocked out six tanks, and the next German *Panzer-Kompanie* pulled back and went into hull-defilade positions to avoid fire. Oberst Josef Irkens, commander of Pz.Regt. 8, ordered Stotten to shift to the right and use the cover in the Wadi Hallouf to reduce exposure to anti-tank fire. Yet for once, the British had ensured that all deadspace was covered by direct or indirect fire, so there really was no cover. When Stotten sent two companies through the *wadi*, two 6-pounder anti-tank guns, including one commanded by Sergeant Joseph F. Crangles, were waiting. While British machine-gunners kept the German tank commanders buttoned up, Crangles and one other gun proceeded to knock out 14 tanks at close range in the *wadi*. Eventually, one skilled German tank commander was able to identify the 6-pounder guns and knock both out with direct hits. German *Panzergrenadiers* then moved in and captured the wounded anti-tank gun crews (including Sergeant Crangles) and overran one platoon of the 1/6 Queens, but this was the highwater mark for the 15. Panzer-Division. Having lost 24 tanks (11 Pz III, four Pz III Ausf N and nine Pz IV) and barely scratched the surface of the 131st Infantry Brigade's defence, Pz.Regt. 8 was no longer capable of further advance.[9] Indeed, Oberst Irkens spent the remainder of the morning trying to extricate his regiment from its awkward position.

In the centre of the German armoured phalanx, Major Werner Grün's I./Pz.Regt. 5 from Hildebrandt's 21. Panzer-Division advanced directly toward the positions held by the 201st Guards Brigade. About 1,000 yards short of the British positions, the lead Panzers spotted a minefield – it was actually a dummy minefield – which convinced them to make a sharp turn to the left. In war, it is axiomatic that it is a terrible idea to move parallel to an alert enemy in broad daylight – unless you are Frederick the Great. On this occasion, around 0830 hours, Pz.Regt. 5 presented the thinner side armour of its tanks to the British anti-tank gunners on the rocky heights. The British opened fire with both artillery and anti-tank fire, which knocked out more than a dozen German tanks in minutes. The fire from the 2nd Battalion Scots Guards was particularly intense and broke up the German attack. Hermann Frömbgen, a tank commander in II./Pz.Regt. 5, was in one of the lead companies:

> Out front, near our attack objective, I identified at least 12 anti-tank guns by their muzzle flashes. All of them were firing at our company; we returned fire. Unteroffizier Volz, to my left, was knocked out. Right after that, the tank of our company commander received a direct hit. Then my vehicle was hit. A return roller flew away. The next hit hammered into the engine. Our vehicle stopped! Despite that, we continued to fire. Then we got hit for the third time. That one hit us on the gun mantlet. A few seconds later we received radio traffic telling us to pull back, but we were stuck… Then we were hit again, this time in the superstructure. Track links, replacement roadwheel and mud guard were flung off. Then a hard, cracking impact in the vicinity of the driver's station… thick smoke was billowing into the fighting compartment. I issued the command to bail out.[10]

Further south, von Broich's 10. Panzer-Division advanced through the Hallouf Pass with Kampfgruppe Gerhardt in the vanguard, with Hudel's I./Pz.Regt. 7 (39 tanks) and Major Pommée's II./Pz.Gren.Regt. 69 in SPWs. Kampfgruppe Gerhardt headed for the village of Metameur, 5 kilometres north-west of Medenine. The Metameur sector was defended by the 28th (Maori) Battalion and the 73rd Anti-tank Regiment (which had 20 6-pounders and four 17-pounders). In order to reach their objective, Kampfgruppe Gerhardt had to cross a dry streambed, which forced it to switch to column formation – just 400 metres from the New Zealand positions. As the first company of Pz IIIs was coming out of the streambed, they were fired upon by two 6-pounders and the four lead tanks were knocked out. A fifth tank was immobilized when a lucky 81mm mortar bomb knocked off one of its tracks. Taking advantage of the German confusion, the aggressive Maori infantry moved forward and captured 15 Panzer crewmen who had abandoned their tanks, including a company commander.[11]

After the initial attacks were repulsed, Cramer ordered both the 10. and 21. Panzer-Divisionen to attack again, using the *wadi*s to leapfrog forward. Around 1000 hours, Pz.Regt. 5 massed 18 tanks and several *Panzergrenadier* companies and tried to reach the positions held by the 1/6 Queens, but was stopped by a curtain of defensive fire. Another attack was launched at 1400 hours, which also failed and left several immobilized tanks hiding in the *wadi*s. Later in the afternoon, C Squadron of 1 RTR, equipped with Shermans, moved forward to engage the remnants of Pz.Regt. 5 and claimed ten kills, although the actual number was probably 2 to 3.[12] Von Broich's 10. Panzer-Division also made another attack in the afternoon, relying more upon its two *Panzergrenadier* battalions, but was pinned down by artillery and could not advance. Amazingly, the promised Luftwaffe support did not appear until 1600 hours; 18 Stukas dive-bombed the positions held by the 1/6 Queens, but British anti-aircraft fire disrupted their attacks. Around 1700 hours, Rommel recognized that Operation *Capri* had failed and he ordered the DAK units to withdraw.

Operation *Capri* had been a complete fiasco. At least 40 German tanks were *Totalausfälle* and at least another 15 were knocked out but recovered. Most of the damage to the German armour was inflicted by the artillery and anti-tank guns. Indeed, it was assessed after the battle that 22 of the enemy tanks were knocked out by just two 6-pounders belonging to Sergeants Andrews and Crangle, and this is probably correct. While a few 17-pounder anti-tank guns did fire on the enemy, their presence did not influence the outcome. Rather, it was the XXX Corps artillery, which fired about 30,000 rounds of ammunition during the day, which smothered each enemy attack.[13] The Battle of Medenine was one of the worst tactical defeats suffered by the Afrika Korps during the entire campaign in North Africa and further weakened the armoured reserve needed to hold the Mareth Line. Montgomery was justifiably proud of his success, although his conservative outlook prevented him from converting this tactical victory into a larger operational-level victory. Montgomery failed to appreciate that Rommel's best forces were exposed at Medenine and vulnerable to a sudden riposte. Unlike El Alamein, there were no messy minefields or anti-tank gun screens to interfere with British armoured manoeuvres at Medenine. Had the 7th Armoured Division and 8th Armoured Brigade been aggressively used on the afternoon of 6 March to mount an immediate attack against the disorganized Panzer-Divisionen, Montgomery could likely have inflicted far greater losses – this was the time to be bold. Yet like Meade at Gettysburg, Montgomery accepted his prize and let the enemy slink away to fight another day.

The Battle of Medenine also proved to be the end of the line for Rommel. Recognizing that the Mareth Line could not be held with the limited remaining armoured reserve, Rommel recommended abandoning the position and retreating to Wadi Akirit. Hitler and the Commando Supremo immediately rejected his recommendation and it was clear that Rommel's cachet had evaporated. On 9 March, he flew back to Italy. Von Arnim eagerly stepped up to take command of Heeresgruppe Afrika, while General der Panzertruppen Gustav von Vaerst took over 5. Panzerarmee. Von Vaerst, the former commander of the 15. Panzer-Division, was an experienced Afrika Korps veteran, but he had been handed an army that was in serious decline.

Even before repulsing the German spoiling attack at Medenine, Montgomery had been considering how to overcome the Mareth Line. Alexander had directed that operations in North Africa should be concluded by the end of April so that an invasion of Sicily could be mounted in the summer months. Under some pressure to get moving, Montgomery initially considered a massive frontal assault against a weaker portion of the Mareth

Line, although this might prove costly. Instead, Montgomery looked for a quick, inexpensive victory through encirclement. Reports from Long Range Desert Group (LRDG) reconnaissance patrols indicated that a desert track that ran around the west side of the Matmata Hills might offer a means of getting a mobile force to the Tebaga Gap, which could outflank the Mareth Line. The desert region west of the hills was known as the Dahar and was thought to be impassable to large mechanized formations. With just two scouting reports on which to base his decision, Montgomery opted to conduct a 'left hook' through the Dahar. However, the 'left hook', as Montgomery referred to it, would require moving a large force across over 240 kilometres of rough terrain without being detected. If the Axis discovered the movement, Messe would certainly reinforce the Tebaga Gap in order to block the envelopment. On 26 February, Montgomery issued his plan for the attack on the Mareth Line, which would employ both a frontal attack by Leese's XXX Corps and wide envelopment around the Matmata Hills by Freyberg's 2nd New Zealand Division.[14] In addition to the two infantry brigades in his own division, Freyberg would be provided with Harvey's 8th Armoured Brigade (with 62 Crusaders, 76 Shermans and 13 Grants), the 1KDRG as a reconnaissance unit and additional artillery and anti-tank units. Initially, the armour would move forward part of the way on tank transporters in order to reduce wear and tear on the engines and tracks. General Philippe Leclerc's Free French L-Force, which included some armoured cars and 13 tanks, was also attached to Freyberg's force, which was now designated as the New Zealand Corps.

Surprisingly, Montgomery seemed in no great hurry to get on with his offensive and Freyberg's division sat at Medenine until 10 March. As usual, Montgomery preferred slow, meticulous operations and was unwilling to move until his logistic and adminstrative requirements were 'in balance'. In the interim, Freyberg's improvised corps loaded up with six days of food and water and enough fuel for 480 kilometres.[15] On 11 March, Freyberg's corps moved east to Ben Gardane as part of a deception effort, then swung around to a staging area south-east of Medenine. The next day, the New Zealand Corps began moving to an assembly area near Bir Amir, 90 kilometres south of Medenine. A pass through this remote area was named 'Wilder's Gap' by the first LDRG patrol to reach it. Quartering parties went ahead of the main columns and marked the route with black diamond signs. It took one week for the entire corps to reach the assembly area and there was great concern about Luftwaffe reconnaissance activity spotting the assembly area. As it was, the Luftwaffe did not spot the assembly area until 18 March.[16]

In order to keep Messe focused on Leese's XXX Corps, elements of the 50th and 51st Infantry Divisions moved forward on the night of 16/17 March and began clearing away the enemy combat outposts and mines deployed east of the Mareth Line. The 201st Guards Brigade also mounted a costly 'diversionary attack' toward the centre of the Mareth Line, but this unexpectedly ran into two German battalions of the veteran 90. leichte Division and was repulsed with 522 casualties.[17] The Desert Air Force increased harassing attacks on Axis units in the Mareth Line to keep them under pressure. At the same time, Patton began his offensive with the US II Corps, using the 1st Infantry Division to move against Gafsa on 17 March. The only Axis forces in the area were the German A.A. 580 and three battalions of the Italian 'Centauro' division (two battalions of the 5º Reggimento bersaglieri and the XVII Btgl. Carri M. with 30 M14/41 tanks). When the American infantry attacked, the Italians retreated, covered by the German armoured cars, abandoning Gafsa. The next day, the 1st Infantry Division advanced and took El Guettar against minimal resistance.[18] Consequently, when Messe received the first reports that 8th Army was moving a mechanized group through the Dahar, he also had to consider that the Mareth Line was being probed by the XXX Corps and the back door to Sfax was being threatened by the US II Corps. Messe and von Arnim had limited mobile reserves and they had to be committed into the right sector at the right moment, or the Allies might achieve a decisive breakthrough. Yet Messe and von Arnim were reluctant to commit their armour and instead conducted half-measures. Von Arnim kept the 10. Panzer-Division at Khairoun, where it could be used either against Patton or Allfrey's V Corps. Messe decided to keep the 15. Panzer-Division (with 41 tanks) as tactical reserves behind the Mareth Line, but he sent the 21. Panzer-Division (with 70 tanks) back to Gabès to serve as his operational reserve. He kept the Raggruppamento Sahariano Mannerini as a screening force on his right flank, with an on order mission to reinforce the small blocking force in the Tebaga Gap.

Montgomery was soon aware from ULTRA that the Axis had detected his left hook and informed Freyberg on the night of 19/20 March. By this point, Freyberg's corps was moving to a staging area near Ksar Rhilane, 75 kilometres south of the Tebaga Gap, which was designated as Objective PLUM. The staging area was on the south side of the Wadi el Aredj, a natural obstacle that required eight hours of engineer work to improve its crossability. The route reconnaissance conducted by the LDRG patrols in Chevrolet trucks had failed to fully reveal the difficulties that tanks and artillery would have in crossing this rough terrain, particularly during hours of darkness. Lieutenant Bill Close, a troop leader in 3 RTR, noted that:

> Travelling at night with no lights allowed is difficult for any force, but for tanks it is a nightmare – tank commanders peering out of the turret with dust-rimmed eyes, straining to maintain station with the tank in front. In order to try and observe complete secrecy, radio silence had been imposed and this made control even more difficult.[19]

Out in front, the armoured cars of Lieutenant Colonel Michael J. Lindsay's 1 KDRG pushed north up the track and had their first contact with the enemy in the Dahar – a few armoured cars from Major Hans von Luck's A.A. 3. It was not until around 1600 hours on 20 March that Freyberg's main body crossed the Wadi el Aredj and by dusk the vanguard was approaching the Tebaga Gap.[20] It was now time for Montgomery's plan of attack – designated as Operation *Pugilist* – to unfold. His main attack on the Mareth Line was surprisingly small, involving just five battalions of infantry from the 50th Infantry Division and Lieutenant Colonel John E. Cairnes' 50 RTR (with 51 Valentines, including eight Mk IX with 6-pounder guns).[21] Montgomery chose to attack the eastern end of the Mareth Line, near al-Zarat, in the sector held by the 'Giovani Fascisti' division of the Italian XX Corps.

At 2145 hours on 20 March, the XXX Corps artillery began a one-hour artillery bombardment of the Italian trenches with about 300 guns, which suppressed most of the enemy positions. Then at 2315 hours, two infantry battalions from the 151st Brigade crossed the 70-metre-wide Wadi Zigzaou and climbed the steep embankments on the far side with the help of scaling ladders. After some close-quarter fighting, the British infantry succeeded in capturing two Italian positions on the opposite high ground. The 151st Brigade had attacked on a very narrow sector, just 900 metres wide, and achieved a minor breach. Leese's engineers now moved forward and tried to create crossings over the Wadi Zigzaou for 50 RTR's tanks and the infantry of the 69th Brigade so the penetration could be exploited by morning. However, Montgomery had seriously underestimated the difficulty of crossing the Wadi Zigzaou, which was partially filled with water (over 2 metres deep) due to rain and very muddy. A troop of Scorpions was used to try to clear mines from the approaches, then the lead squadron of 50 RTR moved forward and began dumping bundles of fascines into the *wadi*, but the lead Valentine bogged down in the mucky mess. Working throughout the night, the 233rd Field Company, Royal Engineers managed to help four Valentines cross the *wadi*, but enfilade fire from both flanks forced them to suspend the effort once the sun rose.[22] On the far embankment, the four Valentines helped the infantry to knock out some enemy bunkers that were still resisting. Nevertheless, the remaining Italian and German infantry managed to contain the bridgehead.

Uncertain if this was Montgomery's main attack, Messe sent only a few German battalions to contain the British breach on 21 March and did not launch an immediate counterattack with the 15. Panzer-Division. The respite allowed Leese to move two more infantry battalions across the *wadi* on the night of 21/22 March and to expand the perimeter. The engineers also managed to get the rest of Cairnes' 50 RTR across the *wadi* during the night, but the tanks damaged the single crossing site and a heavy rainfall made it even worse. Consequently, no anti-tank weapons could be brought across the *wadi* to reinforce the British infantry and the bridgehead was rather tenuous. Due to cloud cover, the Desert Air Force was unable to provide effective close air support. Messe finally committed the entire 15. Panzer-Division to a counterattack at 1340 hours on 22 March, which quickly pushed back the British infantry due to their lack of anti-tank guns. Cairnes' 50 RTR put up a valiant fight, but they were at a great disadvantage since most of their Valentines

Lieutenant General George S. Patton Jr, commander of the US II Corps, at El Guettar, 22 March 1943. Unlike most other commanders in North Africa, Patton had been preparing for over 20 years to lead a large armoured force in combat. (Author's Collection)

were equipped with the inadequate 2-pounder gun and inferior in firepower to the medium tanks in Oberst Irkens' Pz.Regt. 8. When a troop of four Valentines supporting the infantry was shot up, Cairnes led his three headquarters tanks forward, but he was killed in action when his own tank was destroyed. The remaining Valentines formed a tight perimeter around the British infantry hunkered down near the edge of the *wadi*, under heavy fire for the rest of the day (and short on ammunition). The 50 RTR managed to knock out nine German tanks but lost 35 of their own. Somehow, the British perimeter managed to hold on during the night and Leese authorized the survivors to evacuate the bridgehead and cross the Wadi Zigzaou, which was completed by 0200 hours on 23 March. Overall British losses in the bridgehead battle were about 600 personnel, including 200 who were captured by the Germans. In spite of a massive superiority in artillery and air support, Montgomery's set-piece attack on the Mareth Line had failed.

Meanwhile, Freyberg tried to conduct an attack from the line of march to seize the Tebaga Gap (Objective PLUM) on the morning of 21 March. Lindsay's 1 KDRG moved out at first light to recon the objective, followed by Harvey's 8th Armoured Brigade (Silvertop's 3 RTR, Eadie's Staffordshire Yeomanry and Player's Notts Yeomanry) However, the last stretch of terrain leading to the objective proved rockier than expected, which slowed progress. Axis engineers had also dug several anti-tank ditches to cover most of the

Tebaga Gap and laid mines and barbed wire. An ancient Roman wall also provided useful defensive cover. When Mannerini arrived with his *compagnie sahariane*, they had prepared positions to occupy; the key position was Hill 201, located in the centre of the Tebaga Gap. Freyberg requested the RAF to bomb the pass at 0800 hours, which occurred on schedule, but Mannerini's defence was not seriously disrupted. After this, the three British armoured regiments tried forcing their way into the gap – without infantry or artillery support – but were stymied by mines, covered by anti-tank guns and light artillery. Although the Italian defence consisted of light infantrymen and obsolescent anti-tank guns, the British failure to use combined arms tactics doomed the attempt to seize the Tebaga Gap in a single coup. Freyberg was forced to spend most of the day bringing up his infantry and artillery to make a proper attack. At 2200 hours, Freyberg's artillery fired a 21-minute barrage on the Italian position on Hill 201, then two New Zealand infantry battalions advanced. In less than an hour, the New Zealanders breached the minefield and then conducted a successful night assault to capture Hill 201, taking 849 prisoners.[23] Major Guy H. Barker's C Squadron 3 RTR, assigned to support the New Zealand infantry, was the only armoured unit that moved forward during the night.

Amazingly, Freyberg did not immediately exploit this success, and a certain lethargy – possibly due to exhaustion – led to inexplicable delays. Harvey decided that he did not want to move up his tanks through the mine gap in the darkness and decided to wait for first light. Although Harvey received much criticism for his indecision, Freyberg was equally to blame for failing to ensure that his tanks and follow-on infantry were actually moving forward. British armoured units had also refused to move at night during the Battle of El Alamein – Freyberg had direct experience of this – and he should have planned accordingly to mitigate a recurrence. Freyberg was a valiant front-line soldier, one of the best in the British Empire, but at this critical moment he allowed subordinates to snatch failure from the jaws of victory. Now the Axis acted with alacrity, quickly sending a battery of 8.8cm Flak guns and some artillery to reinforce Mannerini's remaining forces in the Tebaga Gap. Messe also ordered the 21. Panzer-Division, now under Generalmajor Heinrich-Hermann von Hülsen (one of the few German officers to command mounted cavalry in the Second World War), to move from Gabès to the Tebaga Gap. By the time that Harvey's 8th Armoured Brigade began moving through the narrow breach in the enemy minefield on the morning of 22 March, it was too late. A handful of 8.8cm Flak guns deployed on the overlooking high ground immediately halted the British armour, then Italian and German artillery began to pound the stalled columns. Lieutenant Colonel Edward Kellett, commander of the Nottinghamshire Yeomanry, was killed by a direct shell burst on his tank. Lieutenant Colonel David Silvertop, commander of 3 RTR, was badly wounded by artillery fire. Instead of mounting a determined attack against the thin enemy covering force, Freyberg dithered, moving tanks, infantry and artillery about, but without accomplishing much of anything. While skilled at directing night infantry infiltration attacks, Freyberg was unable to organize a combined arms attack on the fly, even though he had the tools at his disposal. By mid-day, the first tanks from 21. Panzer-Division began to arrive, which ended any remaining hope for advancing into the pass. By sunset on 22 March, the Axis defence at the Tebaga Gap was solid and Freyberg was stymied.

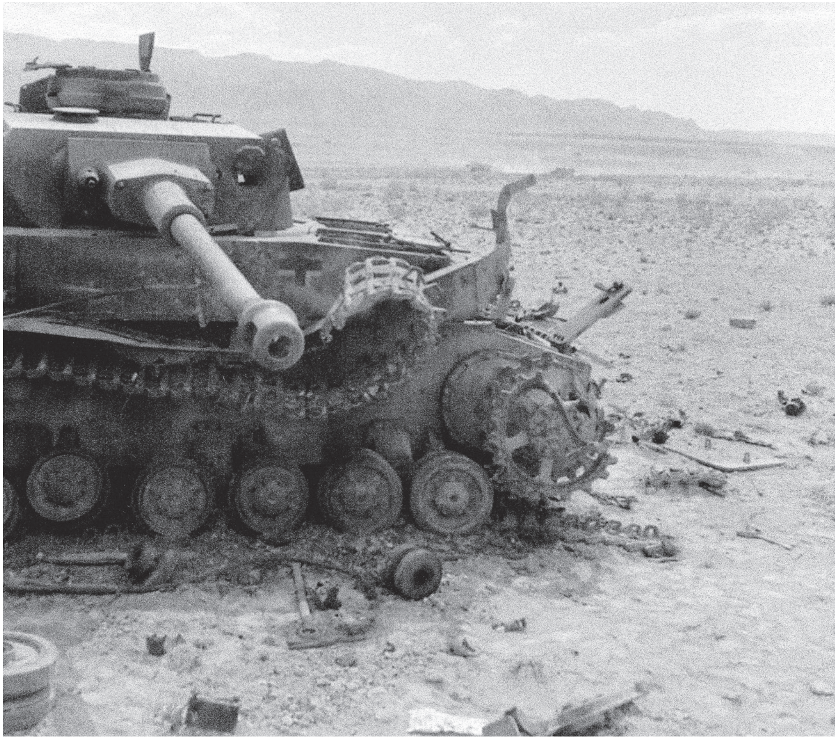
British historians rarely spill much ink noting that Montgomery's initial plan to break through or outflank the Mareth Line was frustrated by an Italian general, Messe, and that Italian troops had performed much better than expected. Messe had committed his reserves at the right moment to foil each of Montgomery's moves, inflicting significant casualties in the process. Even less comment is made on the fact that the defeat of one infantry brigade and one armoured regiment caused Montgomery to abandon any plans for further frontal attacks on the Mareth Line. Despite the 8th Army's clear superiority in men, materiel and supplies, a depleted Axis force holding a thin line of obsolete French bunkers managed to halt the pursuit that had begun at El Alamein. Yet Montgomery wasted no time commiserating and showed his ability to shift to a Plan B – switching his main effort to the Tebaga Gap. Just after Leese evacuated his bridgehead across the Wadi Zigzaou, Montgomery peremptorily ordered Horrocks and his X Corps staff to move to take over the forces at the gap, while Freyberg reverted to commanding only the 2nd New Zealand Division. Montgomery ordered Briggs' 1st Armoured Division to move to the gap as well, while the 4th Indian Division began out-flanking the west end of the Mareth Line by infiltrating through the Matmata Hills. A new set-piece attack, designated *Supercharge II*, would commence once all these forces had repositioned. Yet it would take at least two days to move Briggs' armour to the left flank and the Axis were now very alert to this possibility. Messe ordered the 164. leichte Division to reinforce the blocking force at the Tebaga Gap.

While Montgomery had briefly paused his offensive, Patton was continuing his advance based upon Alexander's order to support Montgomery's attack on the Mareth Line. Alexander wanted Patton to threaten Messe's lines of communications, but not to take excessive risks. After Kasserine Pass, von Arnim left very few Axis troops covering the Maknassy sector, so for several days the battlegroup from the Italian 'Centauro' division and Imperiali's L Brigata Speciale were the only units opposing Patton. Ward's 1st Armored Division pushed aggressively forward on the morning of 20 March, with McQuillin's CCA reaching Sened Station by nightfall. Generale Imperiali knew his forces were too weak to hold off the American tanks, so on the night of 21/22 March he pulled his troops back to the Maknassy Pass, where they dug in on the high ground. Major Franz Medicus, commander of the DAK Kampfstaffel, arrived with about 80 German troops, one 8.8cm Flak gun and one 5cm anti-tank gun to join the Italians at the pass. Ward's troops easily occupied the town of Maknassy on the morning of 22 March and Patton ordered him to seize the pass with Stark's CCC by nightfall. Patton was already anticipating a direct thrust to the coast, just 60 kilometres away. Ward frittered away much of the day organizing a night attack, involving two infantry battalions (he had a total of six under his command), which seized some high ground before running out of steam. The next morning, Ward reinforced the 1-6 AIB with a few M4 tanks and tried to push into the pass, but four medium tanks were disabled by mines. Perturbed by Ward's lack of progress, Patton ordered Major General Terry Allen's 1st Infantry Division to begin advancing down the Gafsa–Gabès road, pushing the Italian 'Littorio' division remnants out of the way.

Von Arnim reacted quickly to this American advance by committing von Broich's 10. Panzer-Division on 22 March. He sent the bulk of von Broich's 10. Panzer-Division to stop Allen's 1st Infantry Division near El Guettar, after which it was supposed to advance and recapture Gafsa. Kampfgruppe Lang, with two truck-mounted *Panzergrenadier-Bataillonen*, was sent to reinforce Imperiali at the Maknassy Pass. Kampfgruppe Lang reached the Maknassy Pass early on 23 March, just before Ward's 1st Armored Division could mount a full-scale attack. The Axis defence was anchored on Hill 322, which was quickly reinforced with more 8.8cm Flak guns and anti-tank guns. Patton ordered Ward to take the pass, but most of the day was consumed with preparations and by the time that it went forward at dusk, the now-solid German defence easily repulsed the effort.

The 5. Panzerarmee also had a new heavy tank unit – Major August Seidensticker's s.Pz.Abt. 504, which had arrived in Tunis with three new Tigers on 12 March. Seidensticker was another highly experienced armour officer, who had been a *Panzer-Kompanie* commander in the campaigns of 1939–40, then a battalion commander in Russia in 1941–42. Since Major Lüder had been wounded at Hunt's Gap, 5. Panzerarmee decided to combine the survivors of s.Pz.Abt. 501 with the new unit and place them under Seidensticker's command. On 17 March, Seidensticker had a total of 14 operational Tigers. On 22 March, von Arnim decided to commit all his Tigers to the Maknassy Pass sector. Although Wolfgang Schneider claims that the battalion made a 400km road march to Maknassy Pass, this apparently refers only to the three Tigers that had just landed at Tunis (and the distance was more like 350km). Most of the s.Pz.Abt. 501 Tigers probably remained in the assembly area near Khairoun, about 160km from the Maknassy Pass.[24] It is not clear how many Tigers actually reached the Maknassy Pass area – perhaps six, according to various accounts.

By the evening of 22 March, Allen's 1st Infantry Division had cleared the 'Centauro' division rearguard from the road south-east of El Guettar, taking about 1,000 prisoners in the process. Allen expected to continue advancing down the road toward Gabès the next day, and, given the light resistance so far, he did not deploy his division in a defensive posture. Rather, Allen had five infantry battalions astride the main road (Route 15) on a low ridgeline, along with two artillery battalions and Lieutenant Colonel Hershel Baker's 601st Tank Destroyer Battalion. Baker deployed a small security element

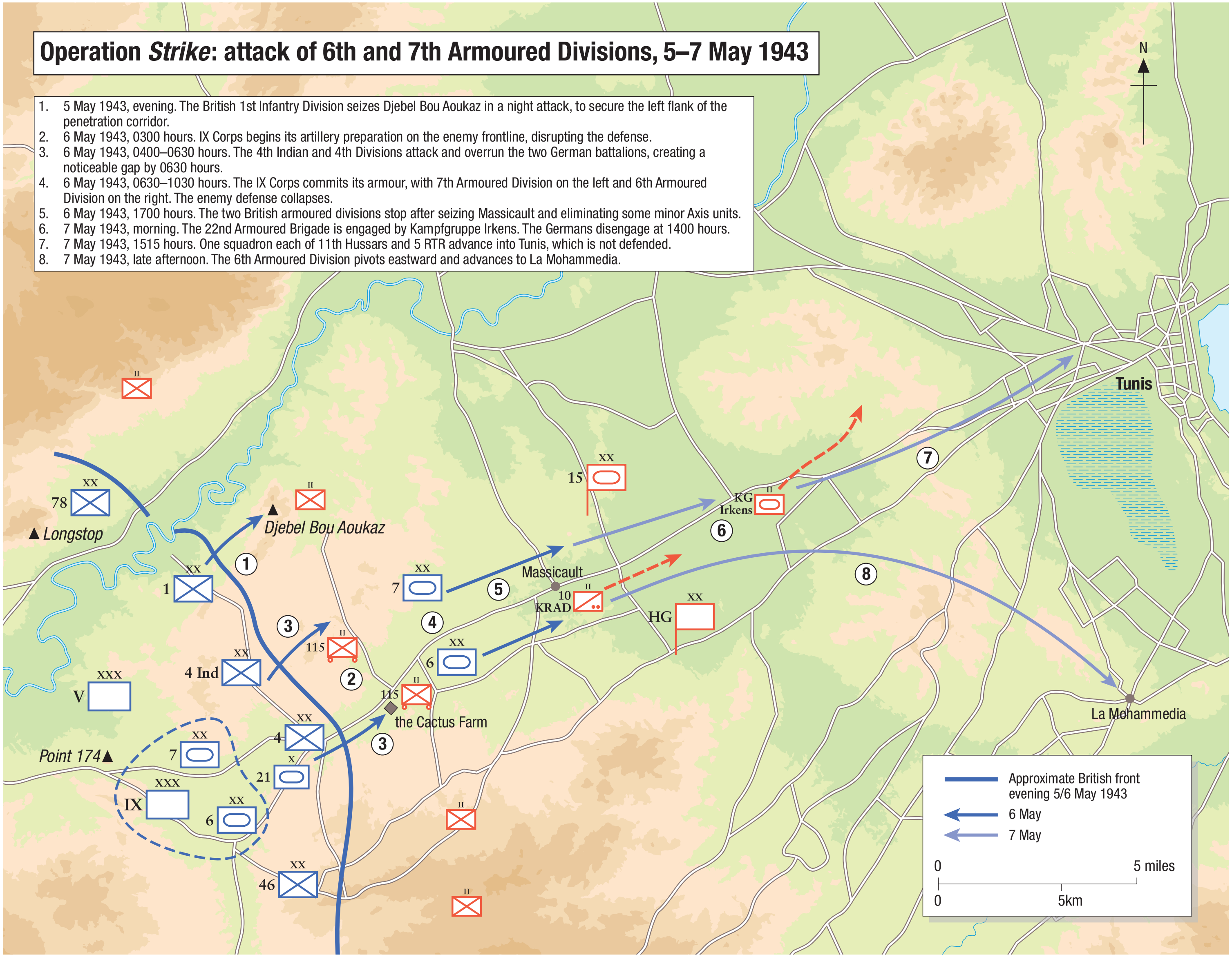


An abandoned Pz IV tank at El Guettar. A relatively minor action, El Guettar was the only real battle Patton fought against the Afrika Korps. (Author's Collection)

along the road, consising of two M3 GMCs, several M6 GMCs and four scout cars, but kept most of his tank-destroyers further back. Although the II Corps G-2 (intelligence officer) had issued a warning that the 10. Panzer-Division might be committed to conduct a counterattack in the El Guettar sector, Allen was apparently caught by surprise when enemy armour was reported approaching around 0500 hours on 23 March.[25] Baker's small security element was easily brushed aside by von Broich's vanguard, which destroyed two halftracks. The 10. Panzer-Division advanced slowly up Route 15, with both battalions of Gerhardt's Pz.Regt. 7 in the lead, followed by two *Panzergrenadier Bataillonen* (II./Pz.Gren.Regt. 69 and II./Pz.Gren.Regt. 86). Allen's 18th Infantry Regiment (three battalions) was soon under heavy pressure and their organic 37mm anti-tank guns were ineffective against the German tanks.

As Gerhardt's Panzers slowly advanced up the valley, with dawn just breaking behind them, Baker's tank destroyers deployed into firing positions behind whatever cover was available. With the thin-skinned GMCs, the idea was to move up from a hull-down position, fire a few rounds, then pull back before return fire arrived. At first, this tactic worked, with the initial volley of 75mm AP rounds from A Company knocking out some tanks. However, the veteran German tankers noticed that the American tank destroyers were not shifting positions after firing and some were firing as many as seven rounds before pulling back, so they began spraying likely firing positions with machine-gun fire. The supporting German artillery battalion also fired smoke rounds to provide some concealment for the advancing German tanks. Although Baker's tank destroyers inflicted considerable damage on Gerhardt's Panzers, his battalion was gradually eliminated over the next four hours (24 of 31 M3 GMC and one of five M6 GMC knocked out). German *Panzergrenadiers* with tank support managed to overrun the 32nd Field Artillery Battalion (105mm) and part of the 5th FAB (155mm) east of Hill 336.[26] Allen appealed to II Corps for more anti-tank support and Lieutenant Colonel Maxwell A. Tincher's 899th Tank Destroyer Battalion began moving forward from Gafsa around 0845 hours. Tincher's battalion had recently re-equipped with the new M10 tank destroyer, armed with the high-velocity 76.2mm gun. First Lieutenant Gerald G. Coady's B Company was sent ahead and reached the battlefield at 0955 hours. Unfortunately, Coady's rapid advance meant that his tank destroyers found themselves in the open and quickly engaged by German tanks. Coady tried to reach the hilly area occupied by the remnants of Baker's battalion, but lost seven of his 12 M10s in the process.[27] Nevertheless, the German armour continued to try to advance up Route 15 – across flat terrain in broad daylight – which was not exactly a demonstration of tactical wizardry. The Americans referred to this open plain as 'Death Valley'. In order to avoid the American engagement area, one group of German tanks tried to swing wide to the west, but became mired in the salt marshes just south of El Guettar. Thereafter, the German attack faltered and Gerhardt pulled his tanks back to regroup.

In the afternoon, Patton arrived on scene and Allen re-organized his battered division. The rest of Tincher's 899th Tank Destroyer Battalion also arrived and was integrated into the defence, as well as additional artillery. Thanks to British tactical wireless intercepts, Patton and Allen were forewarned that 10. Panzer-Division intended to mount another push up the road to El Guettar. At 1645 hours, von Broich began his second attack, this time leading with his infantry – the two *Panzergrenadier-Bataillonen* and Kradschützen-Bataillon 10. Gerhardt's Panzers trailed behind the infantry. Attacking in broad daylight, across flat terrain, against an alert opponent, is a bad idea in anybody's doctrine, but von Broich opted to try. As a palliative measure, von Broich did get some Stuka close air support sorties from III./St.G. 3 at the nearby Mezzouna airfield and one battalion of artillery support, but this was insufficient to suppress the American defence. With Patton and Allen watching from atop Hill 336, the German infantry advanced in loose formations and were decimated by dense concentrations of American artillery fire. After less than two hours, the 10. Panzer-Division withdrew, having lost 37 tanks and a considerable amount of infantry. The two tank destroyer battalions had lost a total of 32 guns and 20 killed in action, while Allen's 1st Infantry Division had suffered about 400 casualties. Although sometimes described as an American tactical victory, the action at El Guettar did not reflect well on either side. Allen's division was caught by surprise and only saved from a Sidi Bou Zid-style defeat by the self-sacrifice of the tank destroyer battalions. Von Broich's initial attack was well organized, but then he conducted



Operation *Strike*: attack of 6th and 7th Armoured Divisions, 5–7 May 1943

1. 5 May 1943, evening. The British 1st Infantry Division seizes Djebel Bou Aoukaz in a night attack, to secure the left flank of the penetration corridor.
2. 6 May 1943, 0300 hours. IX Corps begins its artillery preparation on the enemy frontline, disrupting the defense.
3. 6 May 1943, 0400–0630 hours. The 4th Indian and 4th Divisions attack and overrun the two German battalions, creating a noticeable gap by 0630 hours.
4. 6 May 1943, 0630–1030 hours. The IX Corps commits its armour, with 7th Armoured Division on the left and 6th Armoured Division on the right. The enemy defense collapses.
5. 6 May 1943, 1700 hours. The two British armoured divisions stop after seizing Massicault and eliminating some minor Axis units.
6. 7 May 1943, morning. The 22nd Armoured Brigade is engaged by Kampfgruppe Irkens. The Germans disengage at 1400 hours.
7. 7 May 1943, 1515 hours. One squadron each of 11th Hussars and 5 RTR advance into Tunis, which is not defended.
8. 7 May 1943, late afternoon. The 6th Armoured Division pivots eastward and advances to La Mohammedia.

N
Tunis
La Mohammedia
Massicault
the Cactus Farm
Djebel Bou Aoukaz
Longstop
Point 174
78
1
4 Ind
4
21
7
6
46
V
IX
XX
XXX
X
II
115
10 KRAD
15
HG
KG Irkens
① ② ③ ③ ④ ⑤ ⑥ ⑦ ⑧
Approximate British front evening 5/6 May 1943
6 May
7 May
0 5 miles
0 5km

a foolhardy daylight assault into a well-prepared enemy engagement area – after poor radio security announced his tactical intentions to the Allies. It is possible that von Broich had a low opinion of American combat capabilities due to Sidi Bou Zid and was over-confident in his methods, although the 10. Panzer-Division's recent performance at Sidi Nisr and Hunt's Gap was equally uninspired.

Patton's offensive did succeed in getting von Arnim to commit his only real mobile reserve, the 10. Panzer-Division, to a secondary sector and inflicting significant losses upon it. However, Ward's 1st Armored Division remained stymied at the Maknassy Pass by Kampfgruppe Lang, and Allen's 1st Infantry Division could not advance to Gabès with the bulk of 10. Panzer-Division still blocking its path. Alexander allowed Patton to employ all four divisions of the II Corps in the next phase of the operation, but imposed strict limits of advance upon the Americans – which Patton chose to ignore when inconvenient. Patton also continued to hound Ward to achieve a breakthrough at the Maknassy Pass, although the terrain and enemy clearly made that a futile effort. Further attacks by 1st Armored Division on 24–25 March only resulted in more casualties for negligible gain, including Ward, who was wounded. From the German perspective, Kampfgruppe Lang performed yeoman service, blocking a full-strength American armoured division for over a week. Ward recovered from his injuries, but was relieved of command on 4 April and replaced by Ernest Harmon.

As Patton's offensive was sputtering out, Montgomery was planning to commence Operation *Supercharge II*, with Horrocks' forces at the Tebaga Gap. Generalmajor Kurt von Liebenstein's 164. leichte Afrika-Division held a thin line across the gap with four infantry battalions, while von Hülsen's 21. Panzer-Division with Stenkoff's Pz.Regt. 5 and Panzergrenadier-Regiment 104 deployed on the flanks. Although Messe had done an excellent job fending off Allied attacks at the Mareth Line and the Tebaga Gap, von Arnim was increasingly worried that the Allies might make an unexpected breakthrough somewhere and isolate Messe's 1ª Armata. Against objections from Kesselring and Messe, von Arnim issued an order on 24 March for the 1ª Armata to gradually begin withdrawing from the Mareth Line; this was one of the rare occasions in the Second World War where a German commander took counsel of his fears, while an Italian commander recommended bold, resolute action. Nevertheless, von Arnim got his way and the first Axis units began pulling out of the Mareth Line on 25 March and withdrew to the Wadi Akirit position.

Like most of Montgomery's set-piece operations, the opening moves were well planned. For the first time, the Desert Air Force would employ ground control teams to help direct fighter-bomber sorties onto enemy targets. Harvey's 8th Armoured Brigade would attack across a 3,000-metre-wide front, behind a rolling artillery barrage, with three New Zealand infantry battalions following close behind. Once Freyberg's division broke through von Liebenstein's line, Briggs' 1st Armoured Division would push through the gap to exploit toward El Hamma, 25 kilometres to the north. If all went well, Horrocks' forces would cut off the retreat of the 1ª Armata and achieve a decisive victory in a matter of hours. As a preliminary move, before dawn on 26 March Freyberg sent one of his battalions to clear the Germans off Hill 184, a key piece of terrain that overlooked the startline for the attack. The Desert Air Force also started near continuous bombing of the Axis positions in the Tebaga Gap at 1530 hours on 26 March, with over 400 sorties flown. Allied air superiority over the battlefield was complete, with the Luftwaffe unable to intervene.

At 1600 hours, the RAF conducted multiple low-level strafing attacks with cannon-armed Hurricane II and Kittyhawk fighter-bombers, followed by an intense artillery barrage. Fifteen minutes later, Harvey's 8th Armoured Brigade began its advance, with all three battalions on line; the medium tanks were in the front rank and the Crusaders in the second rank. Each infantry battalion had provided 2–3 infantrymen to ride on each tank, plus one company mounted in tracked carriers to follow in a third rank, then the rest on foot. The combination of low-level air attacks and artillery bombardment suppressed some of the German anti-tank guns and disrupted tactical communications, enabling the British armour to make it across the 1,000 metres of open engagement area before the enemy could fully react. On the right flank, the Nottingshamshire Yeomanry lost three Shermans to anti-tank fire and was hung up, while on the left flank Pyman's 3 RTR ran into mines. Lieutenant Bill Close, a troop leader in A Squadron, 3 RTR, later remembered overrunning the enemy defence:

> We were now in the middle of the enemy defensive position. I could see terrified infantrymen cowering in their trenches, some gun crews lying still beside their guns. I became rather excited and decided to throw a few hand grenades – we suddenly had a box of six in the turret. Not having practised throwing grenades from the turret of a moving tank, I forgot that my gunner had traversed the gun. My first grenade dropped among the New Zealand infantrymen on the back of my tank and bounced off. No one was hurt, but one of the New Zealanders pointed his Sten at me, indicating what would happen should I try it again. I stuck to commanding the tank after that.[28]

During the course of the breakthrough battle, 3 RTR had 20 of its tanks knocked out. Yet in the centre, at a cost of six Shermans, Lieutenant Colonel James A. Eadie's Staffordshire Yeomanry achieved a clean breakthough and even succeeded in pushing past its objective line. At around 1800 hours, Briggs sent Fisher's 2nd Armoured Brigade into the gap with another 140 tanks. Pz.Regt. 5 failed to intervene in time to stop Eadie's tanks, but it moved into hull-down positions and tried to engage the left flank of Fisher's brigade. Five German tanks fired at the 9th Lancers but failed to achieve any hits, and 3 RTR later eliminated those tanks.[29] Despite continued German infantry resistance on the rocky high ground on both flanks, Fisher's armour was able to move through the gap quickly and was able to reach its initial objective, 5 kilometres from the start line, by 1930 hours. With the British armour racing north toward El Hamma, the German defence in the Tebaga Gap rapidly disintegrated and units began pulling back.

Fisher's 2nd Armoured Brigade assembled at a staging area and resumed its advance toward El Hamma at 2345 hours, under a full moon. It was highly unusual for British armour to advance through enemy territory in the dark, but the tanks were able to advance at a rate of about 5 kilometres per hour. Von Liebenstein raced back to El Hamma just ahead of Fisher's armour and was able to establish a blocking position in a defile 5 kilometres south of the town with three 8.8cm Flak guns, four 5cm Pak 38 and four 10.5cm field guns. When the British armour appeared at dawn on 27 March, they were surprised to come under fire from this blocking force.[30] Von Liebenstein had chosen the position well, since there was high ground on both sides and it could not easily be bypassed. Horrocks, arriving at the halted spearhead, was flummoxed and all he could think of was to ask Freyberg to bring up his infantry (who were still mopping up in the Tebaga Gap) to conduct another one of his night infantry assaults. Freyberg demurred, so the British breakthrough was halted for a complete day. In the interim, the Axis accelerated their withdrawal from the Mareth Line, which was completed by the night of 27/28 March. Von Hülsen's 21. Panzer-Division was used to stiffen the defence at El Hamma, while 90. leichte Division conducted its usual professional rearguard. Amazingly, the 8th Army did not immediately pursue the retreating Axis forces, but was content simply to follow them on 28 March. Messe's army retreated into the Wadi Akirit position and Gabès was occupied on 29 March.

Once the Axis retreat from the Mareth Line began, Alexander ordered Patton to make another attempt to push down the El Guettar–Gabès road. Von Broich's 10. Panzer-Division had established an effective defence in this sector (known as the Mrabott Stellung), which frustrated several attempts by Allen's infantry to gain ground. The enemy held a key position, Hill 369, which blocked all movement down Route 15. Patton decided to temporarily transfer a combat command from the 1st Armored Division to spearhead Allen's 1st Infantry Division attack. He selected Colonel Clarence C. Benson, commander of the 13th Armored Regiment, to lead the battlegroup, which was designated Task Force Benson; it consisted of two medium tank battalions (2-1 AR, 3-13 AR), the 899th Tank Destroyer Battalion, the 81st Reconnaissance Battalion and two artillery battalions. Benson began his attack on 30 March under cover of an intense artillery barrage, but was stymied by minefields, covered by 8.8cm Flak guns and lost 13 tanks and two tank destroyers in two attempts.[31] The Italian 'Centauro' division contributed to stopping Task Force Benson with its remaining 14 M14/41 tanks and two Semoventi da 75/18; six M14/41 tanks were knocked out during the fighting. Despite failing to achieve a breakthrough, Benson's aggressive attacks did stress the Italo-German defence, prompting von Arnim to transfer elements of the 21. Panzer-Division to reinforce this sector.

After forcing Messe's army to evacuate the Mareth Line, the 8th Army pushed on toward Gabès. However, effective Axis rearguard actions prevented Montgomery from cutting off any retreating units. (Alamy, EMNR41)

In March, both Patton and Montgomery launched two concurrent offensives which sought to squeeze the Axis forces in southern Tunisia. The operational-level performance of Montgomery's 8th Army was generally sub-par in this period, aside from *Supercharge II*. The failed breach effort at Wadi Zigzaou and the failure to vigorously pursue Messe's retreating army from the Mareth Line were avoidable mistakes. No competent armour leader would ever have attempted to move a battalion of tanks across an obstacle like the Wadi Zigzaou during a rainy period, nor is there any evidence that Montgomery got close enough to see the debacle he unleashed. In contrast, Patton was willing and eager to go right up to the front and observe actions firsthand, although his eye for terrain could also be flawed. Committing the entire 1st Armored Division against a well-defended position like the Maknassy Pass was absurd; Patton had a large superiority in armour, which he failed to utilize to best advantage.

Except for Rommel's ill-judged Medenine counterattack, the Axis operational-level performance in March was quite good and their armoured units tended to show up at just the right time and place to frustrate Allied offensives. Nevertheless, the Axis had clearly lost the initiative in North Africa and their armoured strength was fading fast. All three Panzer-Divisionen were severely reduced and they had been drawn to the south, which left very little Axis armour to support the defence of northern Tunisia. With few replacements and supplies reaching Tunis and Bizerte, the Axis defence of Tunisia was reaching a crisis point. On 30 March, Messe's 1ª Armata reported that it only had 0.6 V.S. of fuel and 0.8 basic load of ammunition in its formations at Wadi Akirit. Von Vaerst's 5. Panzerarmee in northern Tunisia reported that it had only 0.3 V.S. of fuel and 1.2 basic load of ammunition with its formations. The days of Axis manoeuvre warfare in North Africa were over.[32]

ENDGAME: APRIL–MAY 1943

'Goodbye, I shall never see you again, we will all be killed.'

Major Charles L. A. Nix, 17/21st Lancers, Killed in Action, 9 April 1943[33]

Messe settled into the Chott Position at Wadi Akirit with four Italian divisions, the 90. leichte Division and von Liebenstein's 164. leichte Afrika-Division; a grand total of 26 Italian and 12 German infantry battalions to hold a 29 kilometre-wide front. In terms of terrain, the position was formidable, with the deep Wadi Akirit protecting the coastal flank and two major mountains anchoring the centre. The only possible weak spot was the Haidoudi Pass in the west, which is where Messe deployed the 15. Panzer-Division (with 26 tanks) and some of von Liebenstein's infantry. However, Messe had very little firepower left to defend this position nor time to strengthen it; essentially the new Axis line consisted of a series of entrenched battalion-size positions, with just 4,000 mines laid to their front. As usual, 8.8cm Flak guns were deployed along the line for anti-tank defence, but the 8th Army's superiority in field artillery rendered these weapons less dominant than they had been in 1941–42.

Horrocks' vanguard reached the Wadi Akirit position on 30–31 March but after taking one look at the position, Horrocks decided against conducting any hasty attacks. Montgomery concurred and began planning another set-piece attack, designated Operation *Scipio*, to break the Axis line. Having learned something from the Wadi Zigzaou debacle, Montgomery decided to avoid the Wadi Akirit obstacle and to commit larger forces to this new operation. All three infantry divisions in Leese's XXX Corps would attack the centre of the Axis line to seize the two dominant pieces of terrain: the Djebel Roumana and the Djebel Tebaga Fatnassa. Although both were formidable natural obstacles, they were held mostly by Italian troops. Operation *Scorpio*

An RAF Hurricane II flies over a destroyed Marder II tank destroyer, April 1943. Although the RAF had not entered the Desert War with a close air support capability, in three years it developed the aircraft, tactics and doctrine to successfully influence manoeuvre campaigns. (Author's Collection)

had a very limited role for armour; two battalions with a total of 71 Valentine tanks (40 RTR and 50 RTR) were assigned to support the 50th and 51st (Highland) Divisions, but their missions included acting as tractors, towing anti-tank guns forward. The 4 CLY (with 29 Shermans and 21 Crusaders) was to serve as tactical reserve. Briggs' 1st Armoured Division (with 127 tanks) was to make a diversionary attack toward the Haidoudi Pass to keep the 15. Panzer-Division occupied. Once the Axis line was broken, the Royal Engineers were expected to fill in enemy anti-tank ditches and clear a path for Horrocks' X Corps, which would exploit the breakthrough with the 1KDG and Harvey's 8th Armoured Brigade (with 108 tanks).[34]

Leese's XXX Corps began its attack at 0100 hours on 6 April, using a Gurkha battalion to gain a foothold on the dominant Djebel Tebaga Fatnassa, which was followed by the rest of the 4th Indian Division. At 0500 hours, the 50th and 51st (Highland) Divisions launched their own attacks against the Italian centre. The 40 and 50 RTR provided covering fire for the Royal Engineers while they breached the enemy obstacle belt, suffering seven Valentines knocked out by mines and anti-tank fire. Scorpions were used to clear some of the mines in front of the main anti-tank ditch.[35] By about 0900 hours, both the Italian 'Spezia' and 'Trieste' divisions were disintegrating

A Sherman tank of 26th Armoured Brigade moving towards the Fondouk Pass. The high ground assigned to the US 34th Infantry Division is in the left background. (BH, BHC 01538)

and Leese's XXX Corps had created breaches and held the high ground. Messe committed the 15. Panzer-Division to launch a counterattack and requested that Cramer's DAK should transfer additional armoured units from the El Guettar sector. The German counterattack was sufficient to cause several hours of trouble for the 51st (Highland) Division and knocked out more Valentines from 40 RTR, but did not seriously threaten the British breach. By around noon, the engineers had cleared away enough of the enemy obstacle belt for some tanks to begin moving forward up the rough terrain in ones and twos. Scott's 4 CLY was the first to advance, but lost three Shermans to a concealed 8.8cm Flak gun and five more to mines. Over the course of the day, the 4 CLY had five tanks destroyed and 14 damaged.

Although the battle was going well, there was considerable confusion among the British senior leadership about where and when to commit Horrocks' X Corps. At 1330 hours, the Staffordshire Yeomanry began moving through a gap created on the west side of the Djebel Roumana, until they were halted by two 8.8cm Flak guns. Cramer sent the 21. Panzer-Division with 40 tanks to assist Messe, but by the time that it arrived in the afternoon the situation was rapidly deteriorating. An ineffectual counterattack against the 4th Indian Division helped to prevent an immediate breakout, yet the two Italian divisions in the centre had been virtually destroyed. Von Arnim arrived at Messe's command post at 1400 hours and could see that the tactical situation was poor, even though the Commando Supremo and Kesselring urged him to hang on at Wadi Akirit. After waiting a few hours, at 2000 hours Messe gained authorization to retreat to Enfidaville. At the same time, the remaining German forces blocking the US II Corps were ordered to quietly disengage and retreat.[36] During the night of 6/7 April, a large portion of the 1ª Armata was able to withdraw from Wadi Akirit, unmolested by the British. Although Montgomery did not achieve a clean breakthrough at Wadi Akirit, he inflicted considerable damage on the 1ª Armata, forced it out of its fortified positions in less than 12 hours and took 5,211 Italian prisoners (but only 125 Germans).

On the morning of 7 April, as the British were beginning to realize that the enemy had slipped away yet again, Hitler was meeting with Mussolini and General Ambrosio from the Commando Supremo at Schloss Klessheim near Salzburg. Both Hitler and Mussolini agreed to continue fighting in North Africa – regardless of the cost – in order to prevent the Allies from making an attempt to invade southern Europe. The first to pay for that fanatical decision were the Luftwaffe and Regia Aeronautica transport crews involved in the daily transport of supplies and replacements from Sicily to Tunisia. Two days prior, the Allied air forces had begun Operation *Flax*, which committed over 100 fighters to interdict the Axis aerial supply lines. Within days, dozens of Axis transport planes were shot down, and it would get steadily worse. As Axis forces contracted their Tunisian bridgehead, they found themselves increasingly short of fuel and ammunition.

The 8th Army pursuit from Wadi Akirit did not begin until about 1000 hours on 7 April, with the 23rd Armoured Brigade advancing up the coast and 8th Armoured Brigade moving further inland. Although RAF fighter-bombers harried the enemy retreat and destroyed some motor transport, the British ground pursuit had difficulty even gaining and maintaining contact with the German rearguards. Around 1600 hours, Scott's 4 CLY encountered a German rearguard about 20 kilometres north of Wadi Akirit, which included at least one Tiger tank and a few other tanks and anti-tank guns. The British armour went into leaguer for the night, but advanced at first light and found the German rearguard still in place. Three Crusaders were knocked out, then the enemy withdrew. Cramer had also transferred German units away from the US II Corps sector, so Patton immediately sent Task Force Benson down the El Guettar–Gabès road, where it linked up with a patrol from the 12th Lancers around 1730 hours on 7 April. As a result, the mission of the US II Corps in southern Tunisia was essentially completed.

Even before Montgomery launched his attack at Wadi Akirit, Alexander had been planning an operation by Anderson's 1st Army to cut off the expected enemy retreat. The British IX Corps headquarters, under Lieutenant General John T. Crocker, had been held in Sbiba as 18th Army Group reserve for the decisive moment, which Alexander judged to be at hand. Crocker was one of the highest-ranking RTR officers in the British Army, who had commanded an armoured brigade in France in 1940 and was intimately familiar with tanks. Crocker was also an intelligent officer, but he suffered from arrogance and a tendency to ignore unwelcome facts and opinions. Alexander wanted the IX Corps to attack the Fondouk Gap, which was believed to be lightly held, and push on to the east to cut off the retreat of Messe's army. Crocker was given just three days to prepare this offensive and was transferred to a varied collection of units which had never worked together before to conduct it – a recipe for real trouble. In terms of armour, Crocker was given 'Pip' Roberts' veteran 26th Armoured Brigade from Keightley's 6th Armoured Division (recently re-equipped with Sherman tanks), C Squadron 51 RTR (with Churchill tanks) and Lieutenant Colonel Louis A. Hammack's 751st Tank Battalion (which was still equipped with M-3 medium tanks). Crocker was also provided two British infantry brigades (1st Guards and 128th Infantry) from two different divisions, two artillery battalions and the American 9th Infantry Division from the US II Corps. Given that the enemy was thought to have only a few low-quality infantry battalions holding this sector, Crocker's planning was rudimentary and based on limited knowledge of the constrictive nature of the terrain in the Fondouk sector. The narrow pass itself was dominated by the Djebel Haouareb ridge to the south and a rocky hill known as the Djebel Rhorab on the northern side. A meandering and partly dry riverbed, the Wadi Marguellil, had to be crossed to get to the pass and one of its branches ran through the pass itself. Crocker also ignored the negligible prior combat experience of both the American and British infantry battalions tasked with securing the dominant high ground, which was a necessary requirement to gain entry into the Fondouk Pass.

Oberstleutnant Fritz Fullreide had been ordered to hold the Fondouk Pass sector with a Kampfgruppe comprised of two infantry battalions from Afrika-Schützen-Regiment 961, two *Marsch-Bataillonen*, a *Panzerjäger-Kompanie* and an artillery battery, plus a few other assorted elements. In terms of defensive firepower, Kampfgruppe Fullreide had 15 5cm anti-tank guns, seven self-propelled 7.5cm guns, two 8.8cm Flak guns, four light field howitzers and about eight 8cm mortars. Most of Fullreide's troops, like himself, had only recently arrived in Tunisia and included personnel who had been scooped up from other units – it was not a crack outfit by any measure.

At 0530 hours on 8 April, the British 128th Infantry Brigade and its attached squadron of Churchill tanks advanced, securing the village of Pichon and a crossing site over the Wadi Marguellil by noon. However, a German infantry battalion inconveniently stopped it 3 kilometres short of the Djebel Rhorab, so the northern side of the pass remained in enemy hands. Crocker had tasked the US 34th Infantry Division, supported by Hammack's 751st Tank Battalion, with conducting a frontal attack on the Djebel Haouareb ridge, with the infantry and tanks having to cover a wide expanse of open terrain in daylight, which was dominated by fire from a German infantry battalion. In the first attempt, seven M-3 medium tanks were disabled by a combination of mines and anti-tank fire before the American units pulled back. Incensed by the lack of progress by the Americans, Crocker ordered Roberts at 1430 hours to send an armoured group forward to 'reconnoitre vigorously'. Major Charles Nix led his B Squadron, 17th/21st Lancers toward the Fondouk Pass and discovered two things: the Germans had laid a double row of Teller anti-tank mines across the 2km-wide gap and they had a number of concealed anti-tank guns covering the obstacle belt – which was demonstrated by knocking out four of his Shermans. Nix withdrew and reported the dismal news to Roberts.

Alexander was dismayed by the failure of the IX Corps to gain much ground on the first day of the offensive and ordered Crocker to commit Roberts' entire brigade to smash through the Fondouk Gap the next day, whether or not the US 34th Infantry Division secured the Djebel Haouareb ridge. Not fully appreciating the strength of the enemy defence, Crocker also decided to send one British infantry battalion (the 3rd Battalion Welsh Guards) to seize the Djebel Rhorab (dubbed 'the Razorback' by the troops) to support Roberts' breakthrough effort. The Americans mounted their second attack against the Djebel Haouareb ridge at 0715 hours but were repulsed with significant losses, including four more M-3 medium tanks. Fullreide reinforced his forces holding the Fondouk Gap, including six Italian Semoventi da 47/32 self-propelled anti-tank guns. At 0900 hours, Crocker ordered Roberts' brigade to advance, even though engineers had only managed to clear a few mines from the approaches to the pass. Major Charles Nix led B Squadron 17/21st Lancers straight down the middle of the pass, with Major George T. Ponsonby's C Squadron in close support. Since German anti-tank guns were still active to their left, front and right, it was an eerie moment for a regiment whose ancestors had charged at Balaklava in 1854.

Nix's squadron made it right up to the first mine belt, but immediately began losing tanks to enemy fire. Amazingly, Lieutenant Gilbert Micholls led his three Sherman tanks through both mine belts unscathed, but then found himself under fire from seven enemy anti-tank guns on an outcrop known as 'the Pimple'. All three Shermans were destroyed and Micholls was killed. In a matter of minutes, Nix's squadron was reduced to just two Shermans, and Major Ponsonby lost his two lead troops as well, but at least four anti-tank guns were destroyed by 75mm HE rounds and coax fire. German infantry on the high ground shot down British tank crews as they leapt from their burning tanks. With only two of his tanks left in action, Nix ordered a withdrawal, but was shot through the head by a sniper and killed. Altogether, Hamilton-Russell's 17/21st Lancers lost 32 Shermans (eight to anti-tank fire and 24 to mines) and suffered 15 killed and 31 wounded.[37] However, the tide began to turn around 1400 hours when Nicholson's 16th/5th Lancers and attached engineers succeeded in clearing a path through the Wadi Marguellil. Soon thereafter, the 16th/5th Lancers began infiltrating a few tanks along this path, which offered some cover from enemy fire, and by 1530 hours the regiment had made it through the pass.[38] The 2L&BH followed, and the two regiments lost a total of only seven tanks in the process. Meanwhile, the Welsh Guards had been involved in a day-long fight for the Djebel Rhorab, which cost them 114 casualties, and they did not succeed in capturing this key position until 1530 hours. Despite having forced the pass with some of his tanks, Crocker was in no immediate position to exploit the success, because his infantry and artillery were still west of the pass. Instead, Kampfgruppe Fullreide slipped away to Kairouan during the night.

Crocker blamed the American 34th Infantry Division for the delay in clearing the Fondouk Pass, although he had certainly made his own share of mistakes in handling the infantry and artillery at his disposal. Overall, the Americans suffered 434 casualties in the two-day action and Hammack's 751st Tank Battalion had 28 of its 54 M-3 medium tanks knocked out, with the crews suffering 11 dead and 11 wounded.[39] In the wake of this painful and awkward battle, several of the senior participants made imprudent comments that seriously injured the spirit of Anglo-American military cooperation, which required intervention by Eisenhower to mitigate.[40] For his part, Fullreide was awarded the Ritterkreuz des Eisernen Kreuzes for holding the Fondouk Pass for two days against a vastly superior force and inflicting heavy losses – it was a model delaying action.

The British spent the morning of 10 April clearing mines from the Fondouk Pass, then the rest of Rogers' 26th Armoured Brigade pushed through at 1030 hours and headed east to Kairouan. The regimental history of the 17/21st Lancers describes this advance:

> It was the only time during the war that the regiment experienced the thrill of a great armoured formation rolling across real tank country, with absolute freedom of movement in all directions; the whole formation controlled by the Brigadier and working and moving as one.[41]

Yet despite only light resistance east of the pass, it took Rogers' tanks over six hours to travel the 30 kilometres to Kairouan, which they found abandoned. By this point, Crocker learned that the 1ª Armata had already withdrawn northwards and the attempt by IX Corps to cut off their escape had failed. By 12 April, Messe had settled into positions between Enfidaville and Saouaf, created a 30km-long line which Axis engineers frantically tried to improve with mines and anti-tank ditches – yet the cupboard was nearly bare. The main Axis supply dump for the 1ª Armata had been in Sfax, which the 11th Hussars entered on the morning of 10 April. The 11th Hussars also found numerous vehicles from the 15. Panzer-Division abandoned around Sfax, including four Pz III and five Pz IV Ausf G.[42] By the time it reached Enfidaville, Borowitz's 15. Panzer-Division only had 15 operational tanks left and fuel, ammunition and spare parts were increasingly scarce. Von Sponeck's 90. leichte Division anchored the east end of the Enfidaville Line with four battalions, while von Liebenstein's 164. leichte Afrika Division anchored the west end with six battalions. In between, the remnants of three Italian infantry divisions held the centre.

After reaching Sfax, Montgomery's 8th Army virtually halted its pursuit and the 7th Armoured Division stopped to rest and refit for nearly a week. Patrols made contact with Crocker's IX Corps near Sousse on 12 April, but there was an operational pause as the Allies began to redeploy their forces for what would clearly be the final round of operations in Tunisia. By late March, Alexander had already announced his intent that Anderson's 1st Army would be the main effort in the final offensive, and that Montgomery's 8th Army and Patton's II Corps would play only supporting roles. Anderson's army received two new British infantry divisions (1, 4) by early April, as well as Brigadier Thomas Ivor-Moore's 21st Tank Brigade, with three regiments of Churchill tanks. Anderson also received two heavy artillery regiments equipped with the new 7.2-inch (182mm) howitzer, which would prove useful in smashing enemy fixed defences in north-central Tunisia. Patton was incensed that the II Corps was essentially left out of the final operations in Tunisia, causing Eisenhower to intervene with Alexander to modify his plans. Under new guidance issued in mid-April, the II Corps would move with all four divisions (90,000 personnel) and occupy the northern sector opposite Mateur; the II Corps would not report to Anderson's 1st Army but directly to Alexander's 18th Army Group.[43] Patton foresaw few opportunities for armoured warfare in northern Tunisia, and handed over command of the II Corps to Major General Omar Bradley so that he could focus on planning for the forthcoming invasion of Sicily. The II Corps was given little more than a week to transfer north and conduct a relief in place with Allfrey's V Corps, which then shifted to the south. Anderson would launch the main attack with Allfrey's V Corps and Crocker's IX Corps. Montgomery was obliged to transfer Briggs' 1st Armoured Division to reinforce Crocker and accept a secondary role. Montgomery's 8th Army was only assigned to conduct strong fixing attacks against the Enfidaville Line in order to pin down Messe's 1ª Armata; like Patton, Montgomery was dismissive of Alexander's operational concept and preferred to let subordinates handle the day-to-day grind while he focused on planning for the Sicily invasion. Horrocks and his X Corps staff, who were supposed to be specialists in mobile warfare, were assigned to plan an infantry attack on an entrenched line.

On the Axis side, von Vaerst's 5. Panzerarmee had to defend the bulk of the Tunisian bridgehead's perimeter against three Allied corps with the weakest forces (amounting to perhaps 30,000 combat troops). Division Manteuffel, defending the critical Mateur-Bizerte sector, was a jumbled collection of Fallschirmjäger, Italian *Bersaglieri* and *Tunis-Feld-Battailone* troops; the only saving grace was that the commander, Oberst Hasso von Manteuffel, was a cunning and intelligent veteran *Panzergrenadier* officer. The 334. Infanterie-Division, probably the strongest formation in 5. Panzerarmee, guarded the direct approaches to Tunis. Von Vaerst's left flank around Massicault was held by Kampfgruppe Schmid (Generalmajor Josef 'Beppo' Schmid) from the Luftwaffe's Hermann Göring (HG) Division and Oberst Günther Baade's 999. leichte Afrika-Division. The HG Division was a recent concoction under the command of an incompetent officer with no field experience, whose main qualifications were that he had participated in Hitler's Beerhall Putsch in 1923 and was one of Göring's old cronies. The hard core of the HG Division was the veteran FJR5, which was re-designated as Jäger Regiment Hermann Göring. In early April, the HG Division was also provided with a *Panzer-Kompanie*, Oberleutnant Hermann Münzner's 3./Pz.Regt. HG, comprised of ten tanks (two Pz III, eight Pz IV).[44] A *Panzerjäger* unit, with eight Marder II tank destroyers, was also sent to Tunisia. Von Vaerst assigned a detachment of five Tiger tanks from s.Pz.Abt. 504 to reinforce the HG Division sector. Nevertheless, the HG Division sector was the area where the Allies expected to make their main effort. Cramer's DAK, mostly consisting of the 21. Panzer-Division and the Italian 'Superga' division, served as a covering force between the 5. Panzerarmee and the 1ª Armata. Kesselring recommended keeping a strong mobile armoured reserve to deal with enemy breakthroughs on the perimeter, so on 13 April von Arnim ordered all three Panzer-Divisionen to send detachments with most of their operational tanks to an assembly area 20 kilometres west of Tunis.[45] Fewer than 50 tanks arrived.

Mid-April was a relatively quiet period in Tunisia, with only local actions occurring, mostly around Longstop Hill. By 19 April, Bradley's II Corps had moved to northern Tunisia and replaced Allfrey's V Corps in this sector, while Briggs' 1st Armoured Division had transferred to Crocker's IX Corps. Both the US and British armoured units involved in these transfers made extensive use of tank transporters, which significantly reduced wear and tear on the tanks. Unlike the initial stages of the Tunisian campaign, the Luftwaffe was incapable of interfering with these large-scale road movements, which involved thousands of vehicles. With its bases in Tunisia under constant attack, the Luftwaffe's ability to provide air cover or any meaningful close air support missions rapidly dwindled. Anderson intended to make his main effort, Operation *Vulcan*, between Medjez el Bab and Bou Arada with the British V and IX Corps, while the US II Corps would attack on two axes toward Mateur and Bizerte. Montgomery would begin his diversionary attack on the Enfidaville Line on the night of 19/20 April, followed by the main attacks on 22 April. All of the initial 'break-in' attacks were infantry- and artillery-centric efforts, with armoured units held back to exploit breakthroughs if and when they occurred.

Horrocks' X Corps began its effort, designated Operation *Oration*, against the Enfidaville Line at 2130 hours on 19 April, with a total of four infantry brigades attempting night infiltration attacks, following the usual artillery bombardment. The Italian infantry put up surprisingly tough resistance – without much help from the Germans – and after 24 hours Horrocks had not achieved a breakthrough. Montgomery let the offensive continue until the evening of 21 April, but then ordered the attack terminated. Messe's 1ª Armata had held off the 8th Army with tired, depleted units manning a hastily improvised defensive line. In truth, Montgomery simply did not regard the effort as worth the casualties, since he knew from ULTRA that the Axis position in Tunisia was hopeless whether or not his troops broke through at Enfidaville. In order to keep nominal pressure on Messe, Montgomery authorized Horrocks to conduct minor local attacks on the line – although this did not fool von Arnim, and in late April he began transferring tanks and anti-tank guns from 1ª Armata to reinforce 5. Panzerarmee. A territorial unit, the 56th Infantry Division, was brought in to replace the 2nd New Zealand Division and Horrocks decided to give the new unit some battle experience.

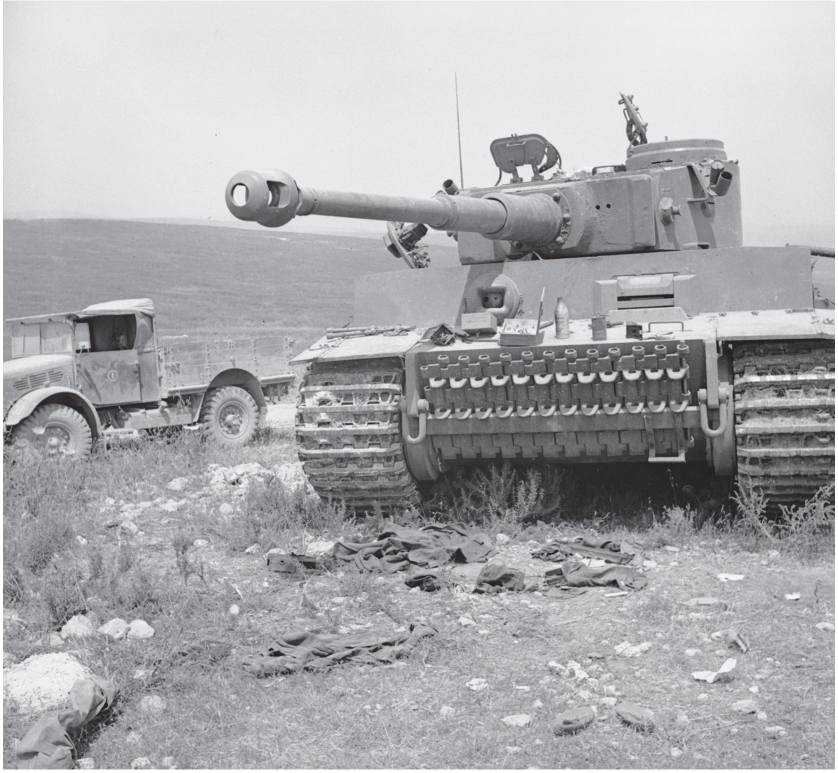
On 28 April, the 56th Infantry Division conducted a brigade-size attack against the Italian 'Giovani Fascisti' division. The Valentines of Lieutenant Colonel James L. Finigan's 40 RTR supported the attack, although they were constrained by the rough nature of the terrain. In any case, the attack not only failed, but the Italians succeeded in recovering some lost high ground with a well-timed counterattack.[46] The only real significance of this action was that the attack by Finigan's 40 RTR turned out to be the final armoured engagement fought by 8th Army in North Africa.

Meanwhile, von Arnim recognized that Allfrey's V Corps was planning an offensive (Operation *Vulcan*) because the Allies made little effort to hide the fact that they were transferring large forces into his sector. Despite severe shortages of fuel and ammunition, he decided to commit the majority of his armoured reserve to a spoiling attack south of Medjez el Bab. The operation was designated *Unternehmen Fliederblüte* (Lilac Bloom) and was intended to strike the boundary between the British 1st and 4th Infantry Divisions with armour, then push through so that Fallschirmjäger could seize the Djebel Djaffa in order to block some of the British supply lines. This was a high-risk operation, with temporary benefits if successful, and one that would require a high degree of professional skill and competence to conduct. Yet instead of selecting a veteran leader from one of the Panzer-Divisionen to lead the attack, von Arnim picked 'Beppo' Schmid, a Luftwaffe officer with no relevant training or experience, to conduct the operation. In addition to three battalions of Fallschirmjäger, Kampfgruppe Schmid was reinforced with 19 tanks from the armoured reserve, including two Tigers. Interestingly, Schmid did not employ his own 3./Pz.Regt. HG in the operation, which remained nearby in defensive positions. The attack began late on the evening of 20 April, with three small *Kampfgruppen* advancing westward. Gruppe Audorff attacked 'Banana Ridge', east of Medjez el Bab, with a reinforced infantry battalion, while the main strike force, Gruppe Schirmer (III./FJR5 and Pz.Regt. 7) attacked the 6th Battalion, East Surrey Regiment near Quballat, 12 kilometres south of Medjez el Bab.[47] The British were initially surprised by the attack and their combat outposts overrun or routed, enabling the Panzers, with Fallschirmjäger mounted on their back decks, to advance over 5 kilometres during the night. One company of Fallschirmjäger did succeed in reaching the Djebel Djaffa, but once the sun came up the German armour found themselves facing entrenched British infantry, protected by mines and 6-pounder anti-tank guns. The 2/6 Surreys called for armour support and Churchill tanks from Lieutenant Colonel G. H. Brooks' 48 RTR soon arrived, leading to a brisk tank duel on the morning of 21 April. Four Churchills from the 48 RTR were knocked out against two German tanks lost.[48] Unable to advance and with his infantry taking heavy losses from British artillery, Schmid called off the attack and ordered a retreat by the afternoon.[49] In its first action, the Hermann Göring Division suffered 327 casualties, rather heavy losses for such a small unit.[50] *Unternehmen Fliederblüte,* an obscure action, was the last major German armoured attack in North Africa.

Mid-April also marked a change in the weather in Tunisia. The rains had let up, enabling the ground to dry and harden, which increased trafficability for tanks. The days were now warm and crops were growing, which affected cover in agriculture areas. In the northern part of Tunisia, waist-high wheat covered many areas and in the central sector, ripening corn fields offered even more opportunities for concealed movement. The nights were still cold, particularly in the mountainous areas, but clearer skies meant more air support, particularly for Allied units.

Operation *Vulcan* began at 0340 hours on 22 April, with Crocker's IX Corps using two brigades of the 46th Infantry Division to clear a path through the HG Division's defensive line on hillocks west of the Sebkret el Kourzia (a shallow lake), held by two infantry battalions. After a barrage from 224 guns, the two British infantry brigades attacked with the Churchills of Timmis' 51 RTR in support and the brigade on the left flank achieved a breach by 1200 hours. Shortly after that, Crocker committed Keightley's 6th Armoured Division. Roberts' 26th Armoured Brigade advanced with self-propelled M-7 105mm howitzers in support from the 11 RHA; two of the M-7s were designated to follow just behind the lead tank squadron and immediately engage any anti-tank guns encountered. Nevertheless, after advancing only about 7 kilometres across the relatively flat Goubellat Plain, which was covered with fields of green corn, Roberts' brigade halted, even though it appeared to have achieved a clear breakthrough. Indeed, Roberts' tanks only went 2 kilometres beyond the area just captured by the 46th Infantry Division. Certainly fire from the HG Division's remaining 8.8cm Flak batteries contributed to the decision to halt, but most of the enemy forces were actually pulling back to the high ground. Tank losses on the first day of the attack were light, mostly due to mines. Keightley claimed that his advance was held up by deep *wadi*s and uncleared mines, but surely engineer support could have been planned to assist with obstacle clearing. In all likelihood, the recent heavy loss of tanks at the Fondouk Pass influenced both Crocker and Keightley towards excessive caution, preferring not to advance against even a few 8.8cm guns until all their artillery and infantry support could follow them.

By the time that Keightley began advancing at first light on 23 April, the Germans had shifted part of the 10. Panzer-Division (including 26 tanks from Gerhardt's Pz.Regt. 7 and four Tigers) into their path, which led to a series of running tank battles over the next four days. Typically, the German tankers would wait in hull-down positions and engage British tanks as they approached, which gave them a tactical advantage. The 17/21st Lancers lost eight Shermans during the day, but claimed to have knocked out three Pz IIIs and one Tiger (with a flank shot). At dusk, a low-level strike by Hs-129 ground attack aircraft caught the 17/21st Lancers by surprise while they were refuelling and destroyed two tanks and five trucks with 3cm cannon fire.[51] The German *Panzergrenadiers* dug in on Djebel Bou Kournine (dubbed 'Camel Mountain' by the troops) and defied all attempts by the



Tiger 131, captured intact east of Medjez el Bab on the afternoon of 24 April 1943. Three lucky 6-pounder hits from Churchill tanks disabled the Tiger and prompted the crew to abandon their vehicle. (IWM, NA2640)

British to storm this position. Gerhardt deployed his tanks in reverse slope positions and was able to halt the onrushing British armour; Gerhardt was wounded and evacuated, but his unit claimed to have knocked out many times the 11 German tanks lost. Von Arnim sent about 40 German tanks from his armoured reserve and an Italian battlegroup led by Maggiore Oderisio Piscicelli-Taeggi, commander of the DLIX Gruppo Semoventi (his group had 17 M14/41 tanks and four Semoventi da 75/18) to reinforce the defence around Camel Mountain.[52] A tank battle near Camel Mountain on 24 April cost the 17/21st Lancers another 11 tanks, while they claimed four more Pz IIIs. After five days of combat, the 17/21st Lancers had lost a total of 25 tanks and suffered 87 casualties (including 21 killed).

Crocker also committed Briggs' 1st Armoured Division on the left flank of Keightley's division, in order to help unhinge the German defence. Fisher's 2nd Armoured Brigade was out of sorts in the broken terrain in Tunisia, which was unlike the desert they were accustomed to in Egypt and Libya. In the 9th Lancers, there were long, time-wasting arguments about the inaccuracy of the French-provided maps, and regiments worried more about whether they were in the 'correct' location rather than simply pushing on to their objectives. The German Teller mines troubled Fisher's tanks, particularly when several were emplaced atop one another – leading to catastrophic explosions that could split a Sherman tank wide open. On 24 April, A

Squadron of the 9th Lancers blundered into a concealed battery of 8.8cm Flak guns and lost five Crusaders in one awful moment. The German artillery also troubled Fisher's brigade, inflicting numerous casualties – including Fisher and Lieutenant Colonel Desmond O'Brien E. Ffrench-Blake, commander of the 2L&BH.[53] Surprisingly, the German mobile defence bent, but did not break even under attack from two British armoured divisions, which frustrated Crocker. By 26 April, it was clear that the IX Corps had been halted by determined German resistance. As a final piece of misfortune, Crocker was badly wounded when one of the new PIAT anti-tank launchers exploded in a demonstration on 27 April, ending his brief tenure in command in North Africa. Briggs' 1st Armoured Division was so badly depleted that it was to be placed in reserve to refit.

After a massive artillery barrage involving over 200 guns (including all the 7.2-inch howitzers), Allfrey's V Corps began its own part of the offensive on the morning of 23 April, with the 78th Infantry Division attacking on the high ground west of the Medjerda River on the approaches to Longstop Hill (Djebel el Ahmera, the western peak, is 290 metres in height and Djebel el Rhar, the eastern peak, is 243 metres), while the 1st Infantry Division worked on clearing the enemy from the east side of the river. The German defences relied heavily on reverse-slope positions to reduce their exposure to fire and the tight integration of mines and anti-tank guns.

Dawney's North Irish Horse (NIH) was available to support the 78th Infantry Division's attack against Longstop Hill, but the infantry commanders were reluctant to use armour since they regarded the terrain as unsuitable. Later, Major Eugene V. M. Strickland, commanding A Squadron of the NIH, stated that:

> Sadly, neither the divisional commander nor infantry brigade commanders would accept that the Churchills could climb the hill in support of their infantry. As a result, a straightforward old-fashioned infantry assault was planned and ordered. The usual long and costly artillery bombardment took place and then the infantry advanced on Longstop, only to find that all the bombardments had achieved practically nothing and that the hill was alive with concrete and steel casemates for mortar and machine-gun posts.[54]

The initial attack on Djebel el Ahmera succeeded, but at the cost of heavy casualties among the British infantry. The 78th Infantry Division kept most of the NIH back, only allowing a single troop of three Churchills to participate in the assault. Amazingly, one Churchill succeeded in reaching the summit of Djebel el Ahmera before dark; the mountain was so steep that mules were required to bring petrol up to refuel these tanks. Based on this success, the 78th Infantry Division decided to employ two squadrons from the NIH to lead the final assault on Djebel el Rhar. The attack began at 0830 hours on 26 April, with Major Eugene Strickland's A Squadron and

Major Gordin Russell's B Squadron slowly crawling up the mountain, followed by one infantry battalion (5th Buffs). The eastern peak of Longstop Hill was defended by a solidly entrenched battalion from the 334. Infanterie-Division. However, the Germans had never expected the British to use tanks on such rugged terrain, and their mines and anti-tank defences proved insufficient to stop the advancing Churchills. British infantry fired flares to mark enemy positions, which the Churchills then hosed down with machine-gun fire. When several Churchills reached the summit, most of the 300-man German garrison surrendered.[55] Thus, armour played a critical role in taking a key position, demonstrating that combined arms warfare can work even in unfavourable terrain.

Meanwhile, the 1st Infantry Division, with the Churchills of 48 RTR and 142 RAC in support, fought a protracted battle around Gueriat el Atach (Point 174), 6 kilometres east of Medjez el Bab. On the afternoon of 24 April, the Germans conducted a local counterattack against the 2nd Battalion Sherwood Foresters near Point 174, using several Tiger tanks from s.Pz.Abt. 504. Although the Tigers occupied good hull-down firing positions, Tiger 131 moved forward to engage a squadron of British Churchill tanks spotted about 830 metres to the south-west. The Churchills fired on Tiger 131 and scored three hits, including one that jammed the turret; with at least two men wounded by fragments, the crew hurriedly abandoned the tank. Soon thereafter, the Sherwood Foresters captured the intact Tiger (which now resides at the Bovington Tank Museum). Fighting continued throughout the day and the other Tigers did succeed in knocking out 29 Churchills from 142 RAC.[56]

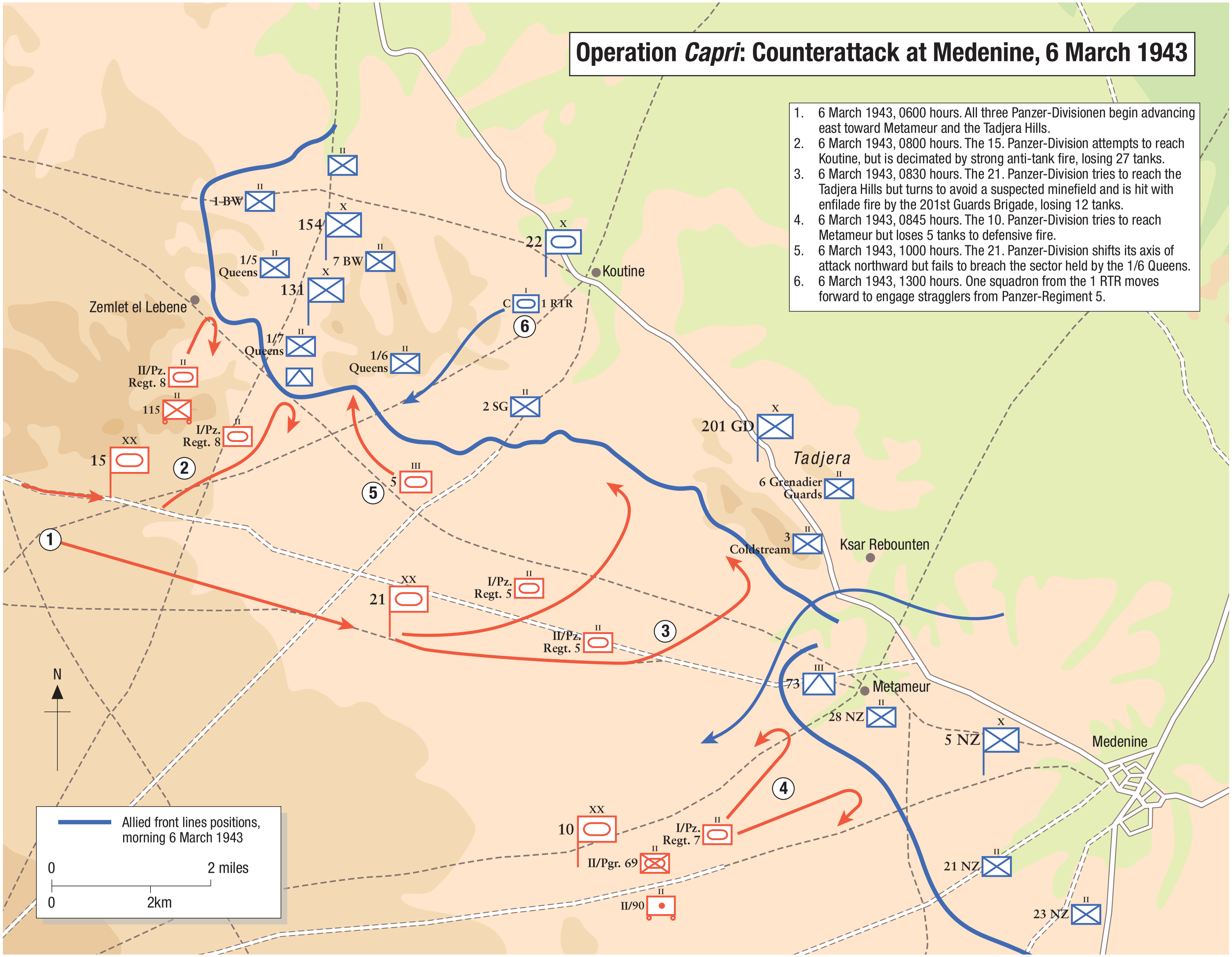
By 27 April, Allfrey's V Corps had cleared the enemy from the high ground on both sides of the Medjerda River valley. On 28 April, the 4th Infantry Division began a push east of Medjez el Bab, trying to advance up the road to Tunis, but ran into a determined enemy resistance nest known as 'the Cactus Farm'. The farm was only held by a platoon of 48 Fallschirmjäger under Feldwebel Heinrich Schäfer, but a good portion of the remaining German armoured reserve was located nearby. Oberst Irkens was put in charge of the reserve, which was designated Panzerführer Afrika. When Lieutenant Colonel J. C. E. Harding's 12 RTR tried advancing toward the Cactus Farm with British infantry, they were ambushed by two of Irkens' Tigers and lost the better part of a squadron of Churchills. The 4th Infantry Division and 12 RTR made similar efforts over the following two days, but repeatedly failed. Finally, a more determined attack on 29 April nearly reached the farm compound, but was repulsed by fanatical resistance. Schäfer's Fallschirmjäger used 3kg demolition charges and magnetic Hafthohlladung mines to immobilize British tanks. On the night of 30 April, Schäfer was ordered to evacuate the Cactus Farm and pull back to another position; his platoon had suffered only three killed.[57] In contrast, the attacks on the Cactus Farm cost Harding's 12 RTR 39 Churchills over the course of four days, as well as 96 casualties (including 29 dead).[58] Anderson's 1st Army succeeded in denting the line held by 5.

Panzerarmee, but not breaking it. Furthermore, between 20 and 30 April, Anderson lost 252 tanks knocked out, which was a considerable portion of his armour for such minor gains.

Bradley's II Corps began its own offensive in the north on the morning of 23 April, attacking with three US infantry divisions and a brigade-size Free French battlegroup, while Harmon's 1st Armored Division remained in reserve. The key position in the sector was Hill 609 (Djebel Tahent), 21 kilometres south-west of Mateur, held by German Fallschirmjäger. Despite ample artillery support, the American infantry had great difficulty overcoming the prepared German defences and suffered heavy casualties in a week of intense fighting. Finally, on 30 April, after four costly failures, the 34th Infantry Division captured Hill 609, assisted by Captain Robert D. Gwin's I Company, 3-1 AR; four of Gwin's tanks were lost to enemy anti-tank guns.[59] Bradley's attacks had been unimaginative and poorly coordinated, resulting in excessive casualties, but Division von Manteuffel was stressed to the breaking point and running out of ammunition. On the night of 30 April/1 May, von Manteuffel began pulling back his battered division, which allowed the Americans to advance into the void on the next day. On 2 May, the Germans pulled out of Mateur and Harmon sent Robinett's CCB in to occupy the city at 1100 hours on 3 May.[60] Lieutenant Colonel Charles J. Hoy's 81st Armored Reconnaissance Battalion found Mateur silent and deserted.

Despite the failure to achieve a clean rupture in the enemy line, it was clear to Alexander and other Allied commanders from ULTRA intercepts that the Axis forces were near the breaking point. Operation *Flax* had throttled the Axis lines of communication from Italy, with negligible ammunition and fuel reaching von Arnim's Heeresgruppe Afrika. Indeed, Allied air power was tipping the battle in favour of Alexander's 18th Army Group. By late April, the RAF and US Army Air Corps were flying 400–500 sorties per day over Tunisia, including 200–300 fighter-bomber sorties. The Luftwaffe and Regia Aeronautica were suffering crippling losses, including 100 combat aircraft just on 26 April.[61] The last supplies reached Tunis on 4 May, with aircraft and shipping bringing in 180 tons of fuel and 1,130 tons of ammunition – basically enough for about two days' worth of defensive fighting.[62]

The German leaders were uncertain where the Allies would mount their main effort, with the most likely areas being the Pont du Fahs in the south-west or along the Medjerda River valley (the Massicault–Tunis axis). Logically, the best defence was to keep the remaining Axis armour concentrated near the approaches to Tunis, but fuel was now so scarce that German tanks were limited to only short-distance manoeuvring. Consequently, if von Arnim guessed wrong where the Allied blow would fall, he would not be able to reposition his armour in time to prevent a breakout. Thus, von Arnim decided to hedge his bets, keeping the 10. and 21. Panzer-Divisionen close to Pont du Fahs, but positioning Generalmajor Willibald Borowietz's 15. Panzer-Division (with 15–20 German medium tanks, the four remaining Tigers and 14 Semoventi da 75/18) to reinforce the HG Division blocking the direct



Operation *Capri*: Counterattack at Medenine, 6 March 1943

1. 6 March 1943, 0600 hours. All three Panzer-Divisionen begin advancing east toward Metameur and the Tadjera Hills.
2. 6 March 1943, 0800 hours. The 15. Panzer-Division attempts to reach Koutine, but is decimated by strong anti-tank fire, losing 27 tanks.
3. 6 March 1943, 0830 hours. The 21. Panzer-Division tries to reach the Tadjera Hills but turns to avoid a suspected minefield and is hit with enfilade fire by the 201st Guards Brigade, losing 12 tanks.
4. 6 March 1943, 0845 hours. The 10. Panzer-Division tries to reach Metameur but loses 5 tanks to defensive fire.
5. 6 March 1943, 1000 hours. The 21. Panzer-Division shifts its axis of attack northward but fails to breach the sector held by the 1/6 Queens.
6. 6 March 1943, 1300 hours. One squadron from the 1 RTR moves forward to engage stragglers from Panzer-Regiment 5.

1 BW
154
1/5 Queens
7 BW
131
22
Koutine
C 1 RTR
6
Zemlet el Lebene
1/7 Queens
1/6 Queens
II/Pz. Regt. 8
115
I/Pz. Regt. 8
2 SG
201 GD
Tadjera
6 Grenadier Guards
15
2
5
5
1
3 Coldstream
Ksar Rebounten
21
I/Pz. Regt. 5
II/Pz. Regt. 5
3
73
Metameur
28 NZ
5 NZ
Medenine
N
4
10
I/Pz. Regt. 7
II/Pgr. 69
II/90
21 NZ
23 NZ
Allied front lines positions, morning 6 March 1943
0 2 miles
0 2km

approach to Tunis. Sensing impending defeat, a significant number of German commanders began seeking opportunities to leave Tunisia, including von Manteuffel, Bayerlein and 'Beppo' Schmid.

Alexander intended to make his final push from the west, with the main effort made by IX Corps along the Massicault–Tunis axis. Horrocks, always a favourite son despite his frequent tactical under-performance, was brought in to replace the wounded Crocker at IX Corps. Due to the heavy losses suffered by the IX Corps during Operation *Vulcan*, Alexander directed Montgomery on 30 April to transfer Erskine's 7th Armoured Division, the 11th Hussars, the 4th Indian Division and the 201st Guards Brigade to reinforce Anderson's 1st Army. Using tank transporters, the 7th Armoured Division's tanks were moved 380 kilometres in just three days and were in assembly areas by 4 May (however, most of the vehicles still had desert yellow-green camouflage, unsuited to central Tunisia). The new offensive, unimaginatively designated Operation *Strike*, was set to begin on 5 May, with Allfrey's V Corps (three infantry divisions) conducting a supporting attack to seize the Djebel Bou Aoukaz. Then on 6 May, Horrocks' IX Corps would use two infantry divisions to create a penetration on a narrow front, which would be exploited by the 6th and 7th Armoured Divisions. Tunis was only 20 kilometres distant. Briggs' depleted 1st Armoured Division would be used as part of a deception effort against the Ponte du Fahs sector. In the north, Bradley's II Corps was tasked with advancing to capture Bizerte. Even the French XIX Corps was assigned to launch supporting attacks in the south to help outflank the Enfidaville line – only the 8th Army was left with no significant role to play in the final offensive.[63]

Allfrey's V Corps attacked on the evening of 5 May, accomplishing its objectives, which helped to protect the left flank of Horrocks' IX Corps. Allied air strikes pounded the German front-line units around Furna throughout 5–6 May, flying a record-setting 1,958 sorties in a 24-hour period; no army had ever enjoyed this level of air support before. At 0300 hours on 6 May, Horrocks kicked off his attack with a massive artillery barrage from over 650 guns, which stunned the German defenders. Then the 4th Infantry Division and the 4th Indian Division, supported by Churchills from the 25th Tank Brigade, attacked on a narrow 2,700-metre-wide front. The two battalions of Panzergrenadier-Regiment 115 deployed along the main line of resistance were shattered by the bombardment and quickly overrun. Some German gun crews ran away, enabling C Squadron of the NIH to capture a battery of six intact 8.8cm Flak guns. By 0630 hours, the first holes in the German line were noticeable and Keightley sent 'Pip' Roberts' 26th Armoured Brigade into the gap created by the 4th Infantry Division. At 1030 hours, Erskine committed Hinde's 22nd Armoured Brigade through the 4th Indian Division. Indicative of light enemy resistance, the infantry suffered a total of only 137 casualties to achieve its breach in the enemy line.[64] A few tanks were disabled by mines (two in Scott's 4 CLY), and congestion at the few cleared gaps in the mine obstacles caused more delay than the enemy. Before noon, it was clear that the German defence had virtually collapsed in this sector and that the remaining elements of 15. Panzer-Division and the HG Division were retreating.

With a clean breakthrough finally achieved, the two British armoured divisions deployed astride the main road to Tunis, with Erskine's 7th Armoured Division on the left and Keightley's 6th Armoured Division on the right, then advanced slowly to the north-east. The 11th Hussars had its three squadrons of Humber armoured cars deployed in front of both divisions as a covering force. Despite the minimal enemy resistance, the British armour did not sprint toward Tunis, but instead moved methodically and focused on keeping both divisions on line. Amazingly, this mass of about 300 British tanks, supported by overwhelming air and artillery support (with forward observers riding just behind the vanguard), advanced barely 12 kilometres on the first day of the offensive, and Lieutenant Colonel Michael Carver's 1 RTR stopped at Massicault, two hours before sunset. Both Erskine and Keightley seemed obsessed with an orderly advance, stopping to mop up even the smallest pockets of resistance, even though they had been specifically ordered by Horrocks to advance as rapidly as possible.

During the evening, Oberst Irkens concentrated his remaining 19 tanks and a battery of 8.8cm Flak guns behind the Wadi Chafrou, a 15-metre-wide irrigation ditch that lay just 6 kilometres beyond the 1 RTR leaguer. His tanks were nearly out of fuel and low on ammunition. Oberst Irkens had chosen to make his last stand behind the Wadi Chafrou because it offered excellent fields of fire, overlooking a wide expanse of flat agricultural land, which was also marshy in places. On the morning of 7 May, both British armoured divisions resumed their stately advance. The British armoured regiments advanced with their Crusader-equipped squadrons out front, serving in the reconnaissance role. Major Gus Holliman, leading A Squadron 1 RTR, was the first to enter the German engagement area and his Crusader was destroyed by Oberleutnant Hautmann's Tiger. However, the British forward observers quickly called in a massive artillery 'stonk' from the supporting 25-pounders, which seemed to have suppressed the Tiger tank. Then Hutton's 5 RTR, on the left flank of Carver's 1 RTR, was able to get its B Squadron into position and plaster the 8.8cm Flak guns with 75mm HE shells, destroying at least two of them.[65] Advancing behind some smoke shells, Carver tried to use a type of bounding overwatch with his two Sherman-equipped squadrons to get close enough to engage the remaining German tanks. The Germans had also deployed some 5cm guns forward of the Wadi Chafrou, typically concealed beside a building or haystack. Carver, in his Grant command tank, had an unexpected encounter with one of these guns:

> I moved my tank up to the side of a small farmhouse, where I hoped to be unobserved. However, just as I drew up behind the back door, an anti-tank gun fired at us, the shot fortunately bouncing off the front plate. I saw where it had fired from, and instantly ordered '75mm/HE

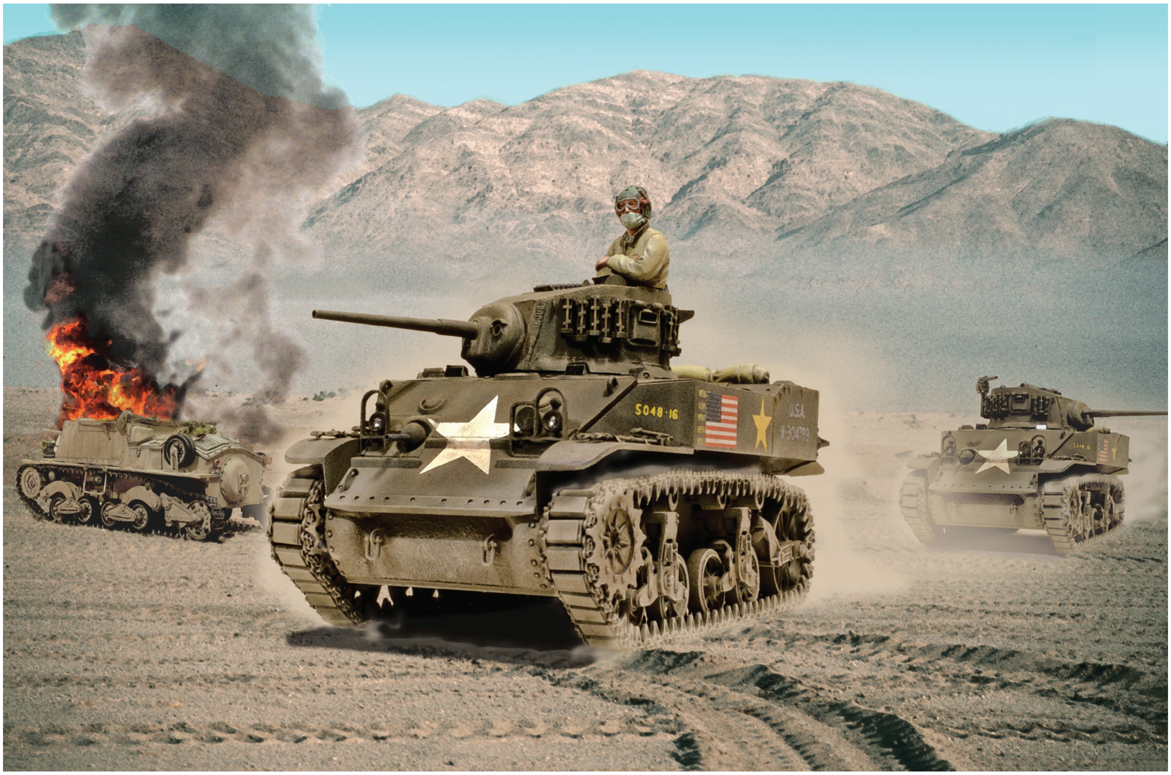
> action'…The gun having fired, I ordered the driver to reverse, only to find myself, with my head outside the turret, entangled in the washing line, watched by the terrified farmer's wife from the kitchen window.[66]

Oberst Irkens later claimed that his *Kampfgruppe* knocked out 23 British tanks in exchange for 12 of his own in the ensuing tank battle – which seems unlikely. British accounts from 1 RTR, 5 RTR and 4 CLY mention no more than four tanks lost. Furthermore, the British refused to simply charge into the enemy engagement area, but rather slipped around their flanks and used their artillery to chip away at the defenders. With his ammunition nearly exhausted, Irkens disengaged around 1400 hours and retreated with his remaining seven Panzers, heading north toward the main airport outside Tunis, hoping to find more fuel there. The Tiger, unable to move for lack of fuel, was blown up by its crew. At 1515 hours, Erskine ordered the 7th Armoured Division to push on into Tunis, with B Squadron, 11th Hussars in the lead. A troop of Shermans from A Squadron, 5 RTR and a

German troops surrender to the crew of a Stuart tank on 6 May 1943. Enemy resistance was sporadic in the final week of the campaign. (IWM, NA2514) platoon of motorized infantry followed. The British troops found German troops all over Tunis, but only a few resisted and many were trying to escape. French civilians were everywhere and some helped to round up German stragglers. The Kradschützen-Bataillon 10 was the last formed Axis unit in Tunis, and it exited from the south side of the city just as the British were entering from the west. By late afternoon, it was clear that enemy resistance in Tunis had evaporated and that the city had fallen.

While Général Marie-Louise Koëltz's French XIX Corps had only played a minor role in the Tunisian campaign to date, it had been steadily re-equipped and reorganized so that it could contribute in the final offensive. A light mechanized brigade (*brigade légère mécanique* or BLM) under Général Guy-Louis Ernest Le Coultreux provided the spearhead for Koëltz's XIX Corps and consisted of three mechanized regiments (2e RCA, 5e RCA and 9e RCA). Each regiment was a small combined arms force, with two platoons of tanks (usually M3A3 or M5 light tanks), motorized infantry and anti-tank detachments and a reconnaissance group.[67] In addition, Koëltz had Colonel Paul de Langlade's 12e RCA, equipped with 23 carefully preserved Somua S-35 cavalry tanks (these tanks had been smuggled out of France after the Armistice in 1940 and hidden in Senegal) and the armoured cars of Lieutenant Colonel Michael J. Lindsay's 1KDRG. The French began their attack on 7 May and quickly captured Pont du Fahs. Aggressively pushing forward on 8 May, Langlade's 12e RCA bumped into the 21.Panzer-Division (which had no tanks left) at Moghrane, where three S-35s were knocked out by anti-tank guns. For the next two days, the French were stymied.

In the north, Bradley's II Corps began some probing attacks on 5 May, so Harmon authorized Robinett's CCB to conduct a reconnaissance-in-force. At 0445 hours on 6 May, Robinett committed Captain Cecil E. Ralston's H Company, 3-13 AR and some mechanized infantry from 1-6 AIB to probe north on the road from Mateur. Robinett carefully positioned tank destroyers from the 776th Tank Destroyer Battalion in overwatch and had his direct support artillery battalion prepared to conduct fire missions. Ideally, the reconnaissance would force the enemy to reveal his defensive positions, which could then be destroyed by the supporting arms. Yet it is axiomatic in war that no plan survives contact with the enemy, and Robinett's plan did not go well. As soon as Ralston's tanks moved out in the open, they were engaged both by enemy anti-tank guns and several unidentified AFVs; very quickly, nine of Ralston's 14 tanks were knocked out. The American artillery battalion was unable to shift fire onto the German guns due to a variety of minor glitches, and the tank destroyers failed to fire at all because they were not in a position where they could see the enemy muzzle flashes. Robinett decided to commit more armour, sending in Gardiner's 2-13 AR. Unfortunately, Gardiner encountered a minefield, covered by enemy anti-tank guns. Gardiner's M4 medium tank was knocked out and he was wounded; six other of his tanks were also disabled.[68] Later, a counterattack by German infantry managed to recapture the high ground that the American infantry from 1-6 AIB had



M5 light tanks of the US Army's A Company, 70th Tank Battalion in the final advance in Tunisia, April 1943. The M5 was a modest improvement over the M3 light tank and it served to the end of the war. (Courtesy of Steve Zaloga)

gained. As if to complete a bad day, Robinett was badly wounded by enemy artillery fire and he was replaced by Colonel Clarence C. Benson.[69] Robinett was a veteran armour leader and a thoughtful soldier who had good instincts for tactics as well as technology, but often clashed with his superiors. Although Rick Atkinson claims that Harmon intended to relieve Robinett of command, this was unlikely on the eve of a major offensive and for the fact that he had proved to be the best of the original combat command leaders.[70]

At 0445 hours on 7 May, Harmon's 1st Armored Division launched its attack from Mateur, with Colonel Kent C. Lambert's CCA advancing north toward Ferryville while Benson's CCB advanced east on Route 7 to seize a road junction. Resistance was less determined on this occasion and German troops were beginning to surrender. By evening, CCA had bypassed Ferryville and Lambert sent Task Force Carr (1-13 AR, 3/6 AIB) east to isolate the German forces near Lake Bizerte. The big break came in the north, where the 9th Infantry Division pushed toward Bizerte, with Hammack's 751st Tank Battalion and the 894th Tank Destroyer Battalion [GMC] in the lead. At 1555 hours, the M-3 medium tanks from A Company, 751st Tank Battalion, with some infantry support, entered Bizerte, encountering only random sniper fire. At dusk, the tank company moved to Bizerte airfield to settle in for the night.[71] Although Bizerte would require some mopping up next day, von Arnim had lost both his major ports and airfields, ensuring that Heeresgruppe

Afrika's fate was now sealed. The Axis forces were quickly broken up into three main clusters: a group south-east of Lake Bizerte and north of Tunis centred around Protville (which included von Vaerst's command group), a larger group falling back toward the Cape Bon peninsula (which included von Arnim's command group and Cramer's DAK) and Messe's 1ª Armata, still holding north of Enfidaville.

Von Arnim established a blocking position with 8.8cm guns from 19. Flak-Division 17km south-east of Tunis at the coastal town of Hammam Lif, in order to slow the British armoured pursuit and give him time to retreat into the Cape Bon Peninsula. Hammam Lif offered a narrow, 600-metre-wide mobility corridor down the coast, but it was a veritable Thermopylae, with rugged high ground covering the left flank and the sea on the right flank. The Germans mined the gap and occupied the town with Kradschützen-Bataillon 10 and some of the remaining Fallschirmjäger. After displaying excessive caution approaching Tunis, Keightley now shifted to boldly sending Roberts' 26th Armoured Brigade south-east along the coast road toward Hammam Lif early on the morning of 8 May. The British tankers were put off guard by French civilians in the town of St Germain welcoming their liberators and about 230 Axis troops who willingly surrendered. Yet as soon as the first tanks of the 17/21st Lancers exited the cover of St Germain, they came under fire from 8.8cm Flak guns, about 1,500 metres away near Hammam Lif. Roberts' tanks pulled back and much of the day was consumed trying to bring up infantry and artillery to mount a set-piece attack. Finally, on the morning of 9 May, Keightley massed his divisional artillery and blasted the pleasant coastal town of Hamman Lif into burning rubble, which silenced most but not all of the enemy guns. Then Roberts was ordered to conduct a charge with the 17/21st Lancers and the 2L&BH. The artillery fired smoke to provide some concealment, but the 2L&BH had to cross about 1,000 metres of open ground and get across a belt of mines. A single well-concealed 8.8cm Flak gun had survived the artillery bombardment, and now, offered a full British armoured regiment, it proceeded to destroy 20 of the 2L&BH Shermans. However, the 17/21st Lancers avoided the enemy mines by charging through the surf at the water's edge, losing only two Shermans to enemy fire. Nicholson's 16/5th Lancers followed behind the 17/21st Lancers and both regiments had punched through the gap by 1530 hours, but the German 8.8cm Flak was still unlocated and continued to actively engage targets.[72] Furthermore, German infantry still held the shattered town of Hammam Lif until nightfall, then withdrew southward through the high ground.

Erskine's 7th Armoured Division split into two pursuit groups on the morning of 8 May, sending A Squadron, 11th Hussars and Hutton's 5 RTR east to occupy the El Aouina airfield, while the rest of Hinde's 22nd Armoured Brigade advanced north toward Protville. Hutton's armoured group encountered no organized resistance, overran El Aouina airfield and took over 10,000 prisoners during the course of the day. Scott's 4 CLY encountered a battery of 8.8cm Flak guns which destroyed two of its Shermans, but the roadblock was quickly eliminated. C Squadron, 11th Hussars and Carver's 1 RTR, heading straight up the Tunis–Bizerte road, would easily have reached Protville, except that enemy sappers had blown up the bridge over the Wadi Medjerda, just short of the town. Unable to find a bypass, Hinde's brigade had to content itself with rounding up another 1,300 prisoners along the road. Horrocks decided to commit Briggs' understrength 1st Armoured Division into the fight to help accelerate the enemy collapse. By the evening of 8 April, Briggs' tanks were introduced between Keightley's 6th Armoured Division and the French XIX Corps, which would help to isolate Cramer's DAK at Zaghouan.

On 8 May, Task Force Carr swung around the east side of Lake Bizerte in order to cut off the escape of German forces retreating from the city, but encountered a Luftwaffe 10.5cm Flak battery near El Azib. Unlike the 8.8cm Flak, the 10.5cm was not really a dual-purpose gun, since it was not optimized for engaging tanks. Lieutenant Colonel Frank F. Carr decided to rush the enemy Flak guns, advancing at maximum speed. Six American tanks were knocked out, but the Luftwaffe position was overrun. Meanwhile, Benson's

A group of destroyed Pz IV Ausf G tanks near Tunis in May 1943. Once they expended their last ammunition and fuel, many crews set their own tanks on fire, which appears to be the situation here. (Author's Collection)

CCB kept pushing east and reached the main Tunis–Bizerte road, then sent Crosby's 3-13 AR south to link up with the British at Protville. With all escape routes cut off and their fuel and ammunition exhausted, von Vaerst decided further resistance was useless. On the morning of 9 May, von Vaerst sent emissaries to parley with Harmon and at 1250 hours, he surrendered all Axis forces in the northern pocket, roughly 40,000 troops.[73] Just prior to the surrender, the crews from Pz.Regt. 8 set their few remaining tanks on fire.

Von Arnim made a futile attempt to establish a refuge in the Cape Bon Peninsula by establishing blocking positions near Soliman and Grombalia, but Keightley's 6th Armoured Division quickly overran these positions on 10 May. In most cases, German units simply fired off their remaining ammunition, destroyed their equipment and then surrendered. On the same day, Roberts' tanks reached Hammamet on the coast, isolating Messe's 1ª Armata. On 11 May, Koëltz's XIX French Corps finally overcame German resistance at Zaghouan and rushed east to link up with the 8th Army near Bou Ficha. On the morning of 12 May, a platoon of French Somua S-35 tanks from the 12ᵉ RCA nearly captured von Arnim and Cramer, who were in a farmhouse with their staffs, but von Arnim delayed until a British officer from the 4th Indian Division appeared. At that point, von Arnim and Cramer surrendered to Allfrey's V Corps. Among the Afrika Korps units, troops maintained discipline and fighting spirit right up to the end. Von Sponeck's 90. Afrika-Division showed some of that old Afrika Korps esprit by marching into captivity led by its divisional brass band. Amazingly, Messe refused the initial demands from 8th Army to surrender and continued to resist for another 24 hours. He did not agree to capitulate until 1230 hours on 13 May, thereby ending the campaign in North Africa. Interestingly, Italian troops fought from the very first day of the campaign in June 1940 until the very last day in May 1943.

Altogether, the Allies captured 238,243 Axis personnel when Heeresgruppe Afrika surrendered, including at least 101,000 German troops.[74] Only about 630 German troops succeeded in escaping to Sicily or Sardinia, including 18 men from the s.Pz.Abt. 501 Werkstatt Kompanie. Three German Panzer-Divisionen (with a total of six *Panzer-Abteilungen*) had been eliminated, along with two motorized infantry divisions and elements of two heavy tank battalions – nearly equivalent to the mechanized forces lost at Stalingrad just three months prior. Hitler and Mussolini regarded the sacrifice of Heeresgruppe Afrika as necessary for delaying an Allied invasion of southern Europe, but Rommel made the valid point that saving even a portion of these veteran troops would have provided the Wehrmacht with a cadre to create a powerful mobile reserve to better respond to any invasion. Later, the OKH authorized the 21. Panzer-Division to be rebuilt in Germany, but the 10. and 15. Panzer-Divisionen and 90. leichte Division were never rebuilt. While the equipment lost in Tunisia could eventually be replaced, the loss of so many trained Panzer leaders and crews would have a serious impact upon the Wehrmacht's ability to conduct future mechanized operations in Europe.

IN RETROSPECT

> *'At the time [April 1943], some opposed high-velocity guns, contending that tanks are not supposed to fight tanks. This however, is false reasoning and contrary to reality. Tanks attract tanks like magnets attract steel. The tank battle is, therefore, to be expected. A tank that cannot, with the help of available supporting weapons, meet comparable equipment is obsolete.'*
>
> *Brigadier Paul M. Robinett, CCB, 1st Armored Division* [1]

Prior to the North African campaign of 1940–43, it was common coin among many military leaders and enthusiasts such as Liddell Hart that mechanized warfare in a desert environment would be akin to naval warfare. Many newcomers to the North African theatre, including Rommel and Montgomery, retained that perspective as well. Yet if three years of armoured warfare in North Africa proved nothing else, it amply demonstrated the unsuitability of this analogy. At the operational level, most of the major tank actions revolved around breach attempts against a fortified position (Tobruk, Gazala, El Alamein, Tunis), not swirling engagements in the open desert. The same phenomenon would be repeated in later desert armoured campaigns – the Egyptian breach of the Bar-Lev line in 1973, the Syrian attempted breach of the fortified Golan Heights also in 1973, and the Coalition breach of the Iraqi defensive line in 1991. Manoeuvre, when employed, focused on exploitation and pursuit, rarely head-to-head clashes against the enemy's main body. Likewise, at the tactical level, experienced tankers sought good hull-down positions to engage an oncoming enemy rather than meet them in the open, where neither side enjoyed an advantage. Furthermore, movement over rough, abrasive terrain mechanically degraded tanks, whereas warships are generally not damaged by contact with water. Thus, unlike naval battles, armoured operations in the desert were deeply affected by terrain considerations, and understanding the terrain was an essential part of effectively directing armoured operations in this kind of environment.

At the beginning of the Desert War, armoured operations were normally conducted at the *zug* (platoon, troop)/*Kompanie* (squadron, company) level, but operations steadily increased in scale as more forces were added into theatre. By mid-1942, both sides were conducting corps-level armoured operations involving two or more mechanized divisions. Indeed, by the end of the campaign in Tunisia in 1943, three of the four armies involved had conducted corps-size mechanized offensive operations – with the exception of the US Army. Indeed, the scale of armoured battles fought in North Africa in 1942–43 was comparable to many of the large-scale battles fought on the Eastern Front in the same period. Altogether, Germany committed nine tank battalions into the North African theatre, Italy sent 18, Britain sent 38 and the US Army sent seven. For a theatre of war that was often regarded as secondary by everyone but Mussolini, the deployment of 72 armoured battalions with a nominal strength of more than 3,500 tanks indicates a rather large-scale commitment.

Table 1: Tank battalions committed to the North African theatre, 1941–43

Nation	Number	Designations
Germany	9	I., II./Pz. Regt. 5, I., II./Pz. Regt. 7, I., II./Pz. Regt. 8, Pz.Abt. 190, s.Pz.Abt. 501, s.Pz.Abt. 504
Italy	18	I, II, III, IV, V, VI, VII, VIII, IX, X, XI, XII, XIII, XV, XVII, XXI, LI, LII Btgl. Carri M.
Great Britain	38	1, 2, 3, 4, 5, 6, 7, 8, 12, 40, 41, 42, 44, 45, 46, 47, 48, 50 RTR; 142, 145 RAC; 3H, 4H, 7H, 8H, 9L, 10H, RSG, 2L&BH, 17/21L, 16/5L, NIH; 2RGH, 3CLY, 4CLY, Notts Yeo, Staffs Yeo, Wilts Yeo, Warwicks Yeo
United States	7	1-1 AR, 2-1 AR, 3-1 AR; 1-13 AR, 2-13 AR, 3-13 AR; 751st Tank Battalion

Despite the limited prospects for a genuine victory in North Africa, the OKH continued to pour valuable resources into Rommel's command throughout much of 1942. When the new long-barrelled versions of the Pz III and Pz IV medium tanks appeared in early 1942, Rommel was provided far more of these tanks than the divisions in the Ostheer; by July 1942, ten of 19 Panzer-Divisionen on the Eastern Front still had no long-barrelled medium tanks. In contrast, both of the DAK's two Panzer-Divisionen, operating in a secondary theatre of war, had been issued at least 50 of the new medium tanks.[2] When Rommel lost most of his tanks during the summer of 1942, he was quickly furnished with replacements. When the Tiger tank became available in late 1942, Rommel was first in line to get 31 of them, even though they were desperately needed on the Eastern Front. The OKH could have curbed Rommel's reckless aggressiveness by limiting tank replacements to him, but instead it indulged him. Even after the Anglo-American forces landed in Algeria and Morocco, the OKH continued to pour more armoured reinforcements into Tunisia, despite the fact that Rommel's army was in headlong retreat.

Over the course of 1941–43, the OKH sent a total of 1,441 tanks to North Africa, which was 16.8 per cent of the total number of tanks built by German industry in this period. Of these, roughly 10 per cent of the tanks were sunk en route and all of the rest were eventually lost by the time that Heeresgruppe Afrika collapsed in May 1943. Again, this level of effort is not indicative of an economy of force operation, and the loss of nearly 17 per cent of German tank output in a secondary theatre had major implications for the war on the Eastern Front and for later campaigns in Western Europe in 1943–44. Had the OKH not chosen to lavishly provide so much armour for Rommel's DAK, the addition of 500–600 medium tanks would almost certainly have improved German combat capabilities on the Eastern Front during the decisive period of the Second World War. For example, the 22. Panzer-Division, responsible for protecting the vulnerable left flank of the 6. Armee at Stalingrad in November 1942, had to make due with a feeble collection of 40 tanks, including Czech Pz 38(t) tanks, which proved insufficient to stop the advancing Soviet tank forces unleashed during Operation *Uranus*. Yet in contrast, at nearly the same time, Rommel had two Panzer-Divisionen with over 120 tanks each defending large tracts of Egyptian sand at El Alamein. Rommel encouraged 'mission creep' by trying to move the goal posts to the Suez Canal, which Hitler and the OKH accommodated, converting the DAK into an offensive force which competed for vital resources with the Ostheer. Every time Rommel advanced past El Agheila, it significantly hurt the overall German war effort.

Table 2: German tanks sent to North African theatre, 1941–43

Year	Pz I	Pz II	Pz III	Pz IV	Pz Bef	Tiger	TOTAL
1941	54	116	245	48	17	0	480
1942	0	61	505	109	16	14	705
1943	0	0	89	150	0	17	256
TOTAL	54	177	839	307	33	31	1,441

Table 3: German tank production January 1941–April 1943

Year	Pz 38(t)	Pz II	Pz III	Pz IV	Pz Bef	Tiger	TOTAL
1941	698	233	1,713	480	132	0	3,256
1942	216	276	2,605	994	50	77	4,218
1943	0	0	161	752	14	154	1,081
TOTAL	914	509	4,479	2,226	196	231	8,555
Percentage to North Africa	0%	34.7%	18.7%	13.7%	15.8%	13.4%	16.8%

Table 4: German tanks lost en route to North African theatre, 1941–43

Pz I	Pz II	Pz III	Pz IV	Pz Bef	Tiger	TOTAL
0	16	78	43	3	0	140

Rommel and the other German armour leaders came to North Africa convinced that victory could only be achieved through manoeuvre and they maintained that *idée fixe* right up to the end, with hare-brained counterattacks such as *Unternehmen Ochsenkopf* and Operation *Capri*. This obsession would continue once the fighting shifted to the continent, with equally doomed operations such as the Mortain counterattack and the Ardennes offensive in 1944. While it is true that manoeuvre is one of the principles of war, it should not be employed as a one-size-fits-all solution. When counterattacks are conducted against an alert enemy who has air superiority, strong artillery and more supplies, manoeuvre becomes little more than a hasty frontal assault. German manoeuvre warfare doctrine was also heavily dependent upon close air support, but as the Luftwaffe's capabilities became overshadowed by the Desert Air Force, the DAK became less and less capable of reaching its objectives. Belatedly, Rommel and some of the other German leaders in North Africa recognized that Allied air superiority was crimping their style of manoeuvre warfare, which he would use as the rationale for German pre-invasion armour deployments in France in 1944.

From the beginning, German armoured operations in North Africa were constrained by logistic limitations, which Rommel refused to accept. The Wehrmacht's concept of mechanized warfare was predicated upon the availability of reliable railway lines of communications – which they did not have in North Africa. While the Regio Esercito had planned to fight in North Africa, their merchant marine and small fleet of cargo trucks were not prepared to support their own army plus a large German expeditionary force in theatre for an extended period. Italian armies deployed in North Africa during 1940–43 consisted of lightly motorized troops, with small armoured spearheads with relatively modest needs for ammunition and fuel. In contrast, Rommel wanted to fight on a European scale of logistic support and he refused to 'live on a budget', which meant that he constantly expended more resources than the limited Italian infrastructure could provide, thereby preventing his quartermasters from ever assembling any significant stockpiles of supplies. Furthermore, neither Rommel nor the OKH were willing to devote personnel or resources to improving the DAK's theatre logistic infrastructure because they shortsightedly felt priority should go to combat capabilities, not support units. Ultimately, the Allies won in North Africa because they consistently targeted the enemy operational centre of gravity – theatre logistic support – and degraded it with coordinated air and naval interdiction campaigns. Without fuel, the Afrika Korps was lost. In contrast, the Axis failed to make a sustained effort to target Allied theatre logistics (with submarines, long-range bombers and special forces) and instead wasted most of their available air and sea interdiction capabilities on a futile effort to suppress Malta.

The importance of theatre logistics in the North African campaign provides an enduring lesson – namely, that operation-level manoeuvre warfare in the desert (or any austere environment) is only feasible if the logistic infrastructure and capabilities are put in place to support it. Furthermore, actual requirements for fuel and spare parts often greatly exceeded projected requirements, since 'book values' were often based on 'ideal' European circumstances, not suboptimal conditions such as moving across a rocky wasteland in the midst of a sandstorm. Under European conditions, tanks did not need to replace air filters very often, but in the desert, it was a regular occurrence. Indeed, the 'wastage' of vehicles in the desert was far worse than anyone expected, particularly when commanders ignored terrain conditions and tried to manoeuvre armoured divisions over unsuitable ground as if they were on Salisbury Plain or Grafenwöhr. Aside from fuel and ammunition, the desert environment was also very hard on troops, and lack of clean water and suitable food led to large numbers of Afrika Korps troops – including Rommel – becoming physically debilitated over time. In contrast, the British 8th Army had a better handle on field hygiene in the desert and access to rest and recreation in Alexandria, which reduced their 'wastage' of personnel.

The Italian armoured experience in North Africa was significantly different from the other combatants, in that the Regio Esercito's tank units suffered from pervasive technology constraints which determined their doctrine and tactics. The principal problem was that the Italian General Staff had failed to anticipate the rapid obsolescence of the M-series tanks, which became a critical failure when American-built Grant tanks equipped with a 75mm gun appeared at the Battle of Gazala. Unlike the British, American and Germans, who had new tank designs in the pipeline to replace their pre-war tanks as they became obsolete, Italy did not put serious effort into designing a new medium tank until after the M14/41 had already become a liability on the battlefield. Efforts were made to upgrade the Semovente platform into a tank destroyer, but this proved too little and too late to change the downward trajectory of Italian armoured combat capabilities. Consequently, after the Battle of Gazala, Italian tankers were forced to avoid tank-versus-tank combat as much as possible and lean more heavily on their attached artillery support. Unsurprisingly, the Italian armoured corps (CAM) met its end at El Alamein and Italian industry was unable to resurrect it, leaving just fragmentary elements to continue on as adjuncts to German units during the last six months of the Tunisian campaign.

As mentioned in the previous volume, the British Army had a real problem with tactical/operational-level command and control, which undermined its ability to pull off complex operations. British tactical radios were decent, but procedures were poor and remained problematic throughout much of the war (contributing in no small part to the disaster at Arnhem in 1944). Leaders like Norrie, Lumsden and Gott, who were indifferent to prolonged communications lapses with subordinate units, set the stage for one tactical disaster after another. Montgomery did make some improvements in the 8th Army's communications security, but too many of the British and Commonwealth senior leaders remained awkward in their use of modern communications technology – even though there was no excuse for this kind of indifference to be tolerated. Likewise, the level of staff coordination in planning complex mechanized operations was too often superficial, such as the planning for many of 8th Army's attacks in June–November 1942.

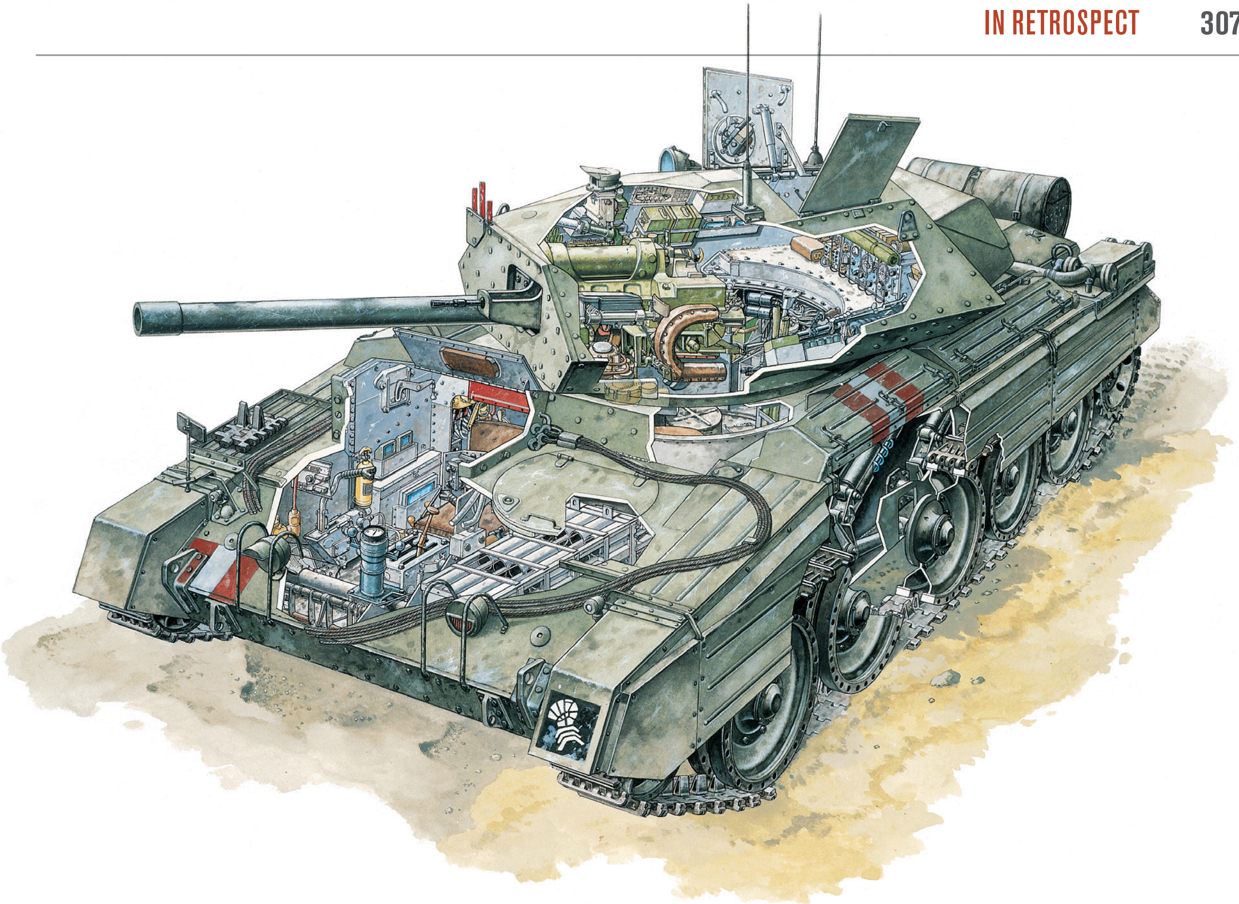
Unlike the Germans, who remained fixated on manoeuvre warfare, the British came to recognize that armoured operations in the desert had a place in positional warfare, usually in support of fortified lines or defending fortified

A German 5cm Pak 38 anti-tank gun concealed in a cactus grove. Difficult to spot, anti-tank guns usually inflicted considerable damage in the opening moments of any engagement. (Alamy, FG8J7G)

ports, such as Tobruk. The idea of conducting sweeping armoured envelopments was quietly dropped after Operation *Crusader* and the 8th Army increasingly opted for heavily supported frontal attacks. Nevertheless, the British Army rarely achieved a clean breakthrough of a fortified enemy line in North Africa, and when they did the pursuit operation was either fumbled or conducted in an overly cautious manner. The breakthrough problem was due to difficulty in creating effective mine-breaching techniques and in suppressing enemy anti-tank guns. Thanks to the efforts of the Royal Engineers and Royal Artillery – who played a large if unheralded part in 8th Army's battlefield victories – sufficient proficiency was gained in creating penetration corridors through enemy obstacle belts for the passage of British armour. Given its often unsatisfactory experience with tank versus tank battles in North Africa, the British Army came to rely upon supporting arms, particularly artillery, engineers and air support, to provide a critical edge in most battles. At Ruweisat Ridge and Medenine, the 8th Army found that concentrated artillery fire could halt armoured attacks, even if not many tanks were actually destroyed. A similar experience occurred with the US II Corps, which found at Kasserine Pass that massed artillery firepower could stop German armour under favourable conditions; this ability of field artillery to immobilize enemy armour had not been recognized in either British or American pre-war exercises. Consequently, Allied doctrine evolved to embrace firepower over manoeuvre, and the lessons learned in North Africa would be applied on a larger scale against the Wehrmacht on mainland Europe. In short, the Germans continued to see tanks as capable of conducting a rapier-like thrust, whereas Allied leaders came to regard tanks as merely a component within an all-arms sledgehammer blow.

In tactical terms, the great clashes of armour that occurred in the desert usually were won by the side that best used terrain to get into hull-down positions, then pick off enemy tanks that were in the open. Stationary tanks, particularly in concealed positions, had a distinct advantage over moving tanks. Until the appearance of long-barrelled 75mm guns, most tank battles occurred at ranges of 800–1,000 metres, which was at the edge of what the 2-pounder and 5cm KwK 38 could effectively engage without wasting ammunition. Once the long 75mm guns appeared, tank engagements were more likely to start at 1,200 metres or a bit further. Post-battle analysis indicates that only about 25 per cent of tanks that were hit were actually destroyed (*Totalausfälle*), which put a premium on battlefield recovery and repair. Yet tanks were difficult to conceal in the desert, and once spotted they could be suppressed by artillery. The trick was not to let the enemy see your real anti-armour defences until they were already in the engagement area. By 1942, both sides had learned that the best method of defeating armoured attacks in the desert was with a low-profile anti-tank gun, such as the German 5cm Pak 38 or the British 6-pounder gun, overwatching a mine obstacle. These anti-tank weapons were exceedingly difficult to spot, could pump out a lot of rounds quickly and were very dangerous within 600 metres. While the German 8.8cm Flak gun made its mark as an effective long-range anti-tank gun, able to defeat the best British tanks out to 2,000 metres on a clear day, it proved fairly easy to suppress with artillery fire once it was detected. Furthermore, the 8.8cm Flak gun was essentially a positional weapon, which could not easily be moved about the battlefield due to its size.

Much debate has been spent over the years on the alleged deficiencies of British tanks, although technical superiority between armoured fighting vehicles (or other implements of war) is inherently an ephemeral quality. It is true that the 8th Army employed a varied collection of armour in the desert, operating no fewer than six different models of British-built tanks and three different American-built tanks in 1940–43, which created a variety of issues in the field. As more tank types arrived in theatre, with different ammunition and fuel requirements, tactical logistics became more challenging, crews needed to be retrained and British armoured doctrine became less distinct. Prior to the arrival of American-built tanks equipped with 75mm guns on the battlefield, British tank crews had virtually no experience firing HE rounds (aside from the few CS tanks) or firing at targets beyond 1,000 metres. The leap in technology from Cruiser Mk IVA to the Sherman, which occurred in one fell swoop for some units, was a major hurdle. The 8th Army experience with tanks also suffered from increasing doctrinal confusion, as pre-war doctrines about infantry tanks were hobbled by the fact that the 2-pounder gun could not fire HE rounds and the slow-moving Matilda and Valentines often proved to be cannon fodder for anti-tank guns. Only the appearance of the Churchill Mk III, armed with a 6-pounder gun and very thick armour, reversed the decline of the infantry tank concept in the final months of the Tunisian campaign. The cruiser tank concept also took a beating in North Africa, for three technical reasons which British industry could not easily fix: small turret rings that could not accommodate a larger gun, poor levels of armoured protection and poor mechanical reliability. The Crusader II and III tanks were kept on strength during the Tunisian campaign, but they were reduced to being mere scouts for the better-armed and protected medium tanks.



British Crusader Mk III with 6-pounder gun, Tunisia 1943 (2L&BH, 6th Armoured Division). By the time that Britain was able to upgrade its tanks to 6-pounders, the Sherman was already available. (© Osprey Publishing Ltd by Peter Sarson. From NVG 14 *Crusader and Covenanter Cruiser Tanks 1939–45*)

Much less attention has been focused on the level of armoured forces committed to the Middle East Command, which was Britain's most important theatre of war in 1941–43. Overall, Britain sent about 3,500 tanks from its factories to the desert in 1940–43, which was about 18 per cent of its total production – this was enough to give the 8th Army a numerical superiority over the Afrika Korps, but not a decisive one. Auchinleck repeatedly stated that he needed at least two full-strength armoured divisions to mount a proper offensive, but it took Britain two years to assemble this size force in the Middle East. Yet simultaneously Britain was sending roughly 30 per cent of its tanks (about 5,500 in 1941–43) to the Soviet Union. While limited shipping space was certainly a strategic factor that influenced Britain's ability to commit and sustain a mechanized army in the Middle East, the political decision to allocate so much shipping and tanks to sustain Stalin's war effort came at the expense of the 8th Army's own armoured capabilities. Indeed, it was not until American medium tanks began arriving in quantity in the Middle East in mid-1942 that the 8th Army could begin to engage the DAK on a more equal footing. At times, the DAK did have a mix of better medium tanks, but this advantage was transitory since the backbone (60 per cent) of Rommel's armoured force was the Pz III armed with either the short 5cm KwK 38 L/42 or long 5cm KwK 39 L/60 cannon, which was outclassed by the Sherman at El Alamein.

The Tiger heavy tank, much beloved by modern hobby enthusiasts, was an ignominious failure in North Africa, where it lacked the maintenance support, operational reliability and tactical mobility to contribute much. The Tigers were only able to make full use of their superior firepower on a few occasions, and the fact that so many were knocked out by mines or 6-pounder guns indicates that their level of armoured protection was far from impregnable.

Of course, the focus then and now on highlighting technical differences between opposing tanks tends to obscure the underlying causes of success and failure on the battlefield, which lay in disparities between training and small-unit leadership. The real weapon is the tank crew, not the tank itself – this has been proven again and again on the battlefield. Most of the British and German tank crews were adequately trained on gunnery and driving skills, although their training on field maintenance and repairs was rudimentary at best. During retreats, too many tanks were abandoned for simple reasons, such as thrown tracks. Junior armoured leaders at the troop (*zug*)/squadron (*Kompanie*) level on both sides tended to be highly motivated leaders, although there were some exceptions. Due to the emergency created by Operation *Compass*, Italian tank crews were pitched into combat in North Africa in 1941 with minimal training, which led to heavy losses at Beda Fomm. However, once given adequate time to train, the veteran Carristi in the 'Ariete' division in 1941–42 proved quite capable. Likewise, American tankers faced a steep learning curve in North Africa, suffering unnecessary losses in early actions. Unfortunately, since only the 1st Armored Division was committed to the Tunisian front, many of the lessons learned there at great cost were not internalized by the rest of the US Army armoured forces and had to be re-learned in Italy and France in 1943–44.

Nor should the focus of armoured operations in the North African campaign be entirely on tanks, since the human costs were considerable. The British Army lost eight tank battalion commanders killed in North Africa (plus another five captured), Germany lost four *Panzer-Abteilung* commanders killed, the Italians three and the Americans one. Given the fluid nature of combat in the desert, five German *Panzer-Division* commanders also met their deaths in North Africa, plus two *Panzer-Regiment* commanders. The Pz. Regt. 5, which fought for two years in North Africa, lost a total of 344 dead over the course of the campaign. The 2 RGH, which only saw one year of combat in North Africa, suffered 72 deaths, 100 wounded and 85 captured in that period.[3] The 8 RTR, also active for one year in North Africa, had 70 deaths.[4] The Royal Wilts, who only participated in the Second Battle of El Alamein, had 31 dead in one month.[5] Altogether, the four armies that fought in North Africa in 1940–43 lost thousands of tankers dead, plus many more wounded, although exact numbers are uncertain. Every army struggled with replacing personnel losses from combat, disease and accidents, particularly after a major battle.

Certainly the most important and enduring lesson that can be derived from three years of armoured operations in North Africa is that senior leaders tasked with conducting combined arms operations need to possess the training, experience and requisite mindset to get the most out of their armoured units. There were too many division commanders like Frank Messervy and Rudolf Lang or corps commanders like Gott and Fredendall who committed egregious errors with armoured units – they never should have been placed in those positions. Armoured warfare requires an aggressive mindset, particularly in pursuit operations, which was simply lacking among most of the senior infantry officers who were given command of large tank formations. Only a few senior leaders, particularly Rommel, O'Connor and Patton, had the necessary instincts to use tanks boldly. Even when senior leaders were cognizant of the principles of combined arms operations, their technical ignorance about tanks could play a major role in preventing armoured units from achieving their full potential (e.g. Longstop Hill) or committing them under suboptimal conditions (e.g. Hunt's Gap).

Although tanks had been around for 25 years at the start of the Desert War, many senior leaders on both sides knew relatively little about these weapons and only understood them in abstract terms; indeed, much of their superficial knowledge was based on occasional interactions with pre-war tankettes and light tanks, which had very little in common with the 30-ton medium tanks of 1942–43. Tanks were also regarded as a niche specialty in virtually every pre-war army, of limited interest to the other branches. In the 19th century, every senior military leader knew quite a bit about horses, no matter what branch they served in, because they all rode horses. Napoleon (artillery), Wellington (infantry) and Lee (engineers) knew about the need to re-shoe horses, their requirements for fodder and how far they could go on campaign. These military leaders instinctively knew that one cannot make bricks without straw and that ignoring the proper care of horses meant that your cavalry would not be there when you needed it. Yet in the 20th century, senior military leaders were often blissfully ignorant about tanks, their maintenance and logistic needs, what kind of terrain they could traverse, and what impact weather or temperature had on them (e.g. Moscow 1941). Although leaders such as Montgomery or Rommel might pose on tanks, they really had no clue about these weapon systems, which is evident in how they frequently reduced much of their own tanks to broken-down or burning wrecks against the advice of actual armour officers. Instead, the upper ranks in the military machines in each of the major armies was dominated to some extent by cliques that were generally dismissive of new technologies, such as the 'Indian Army' and infantry cliques in the British Army, the US Army CGSC (Command and General Staff) graduates from Fort Leavenworth and instructors from the Fort Benning infantry school, and *Generalstab* officers in the Wehrmacht, particularly those who served in the pre-war *Truppenamt*. Unfortunately, the military cemeteries at El Alamein, Tobruk, Benghazi, Massicault, Medjez el Bab, Tunis and other places in North Africa are filled with tankers who paid the price for mistakes made by a generation of officers who were not ready to play the roles that history handed them.

GLOSSARY

GENERAL TERMINOLOGY

AFV	Armoured Fighting Vehicle
AP	Armour Piercing
APBC	Armour Piercing Ballistic Cap
APHE	Armour Piercing High Explosive
C^2	Command & Control
cbm	cubic metre of fuel, equivalent to 5,000 litres or 739kg
FHA	Face Hardened Armour
HEAT	High Explosive Anti-tank
RHA	Rolled Homogenous Armour

COMMONWEALTH TERMINOLOGY

2L&BH	2nd Lothians and Border Horse
CIGS	Chief of the Imperial General Staff
CLY	County of London Yeomanry
cwt	hundredweight (1 cwt = 50.8 kg)
DMI	Director of Military Intelligence
EMF	Experimental Mechanized Force
FSD	Field Supply Depot
GSO	General Staff Officer
HAC	Honourable Artillery Company
KDG	King's Dragoon Guards
KRRC	King's Royal Rifle Corps
MWEE	Mechanical Warfare Experimental Establishment
NIH	North Irish Horse
RAC	Royal Armoured Corps
RAF	Royal Air Force
RAOC	Royal Army Ordnance Corps
RASC	Royal Armoured Service Corps
RB	Rifle Brigade
RE	Royal Engineers
RGH	Royal Gloucestershire Hussars
RHA	Royal Horse Artillery
RSG	Royal Scots Greys

RTR	Royal Tank Regiment
RWY	Royal Wiltshire Yeomanry
SAACR	South African Armoured Car Regiment
TA	Territorial Army

GERMAN TERMINOLOGY

A.A.	Aufklärungs-Abteilung (Reconnaissance Battalion)
AOK	Armeeoberkommando (Army)
DAK	Deutsches Afrika Korps (Africa Corps)
FJR	Fallschirmjäger-Regiment
Flak	Flugabwehrkanone (anti-aircraft gun)
Gefechtstroß	Combat trains, including ammunition trailers
Gep.	Gepanzert (armoured)
Gepäcktroß	Baggage train, including field kitchens
gl.	Geländegängig (cross country)
HKL	Hauptkampflinie (main line of resistance)
I-gruppe	Instandsetzungsgruppe (Repair Group)
Kradschützen	Motorcycle infantry
Kfz.	Kraftfahrzeug (motor vehicle)
LKW	Lastkraftwagen (truck)
M.G. Btl.	Maschinengewehr-Bataillon (Machine-gun Battalion)
MFP	Marinefährprahm (motorized barges)
OKH	Oberkommando des Heeres (German Army High Command)
OKW	Oberkommando der Wehrmacht (High Command of Armed Forces)
Pak	Panzerabwehrkanone (anti-tank gun)
PKW	Personenkraftwagen (motor car)
Pz.Abt.	Panzer-Abteilung
Pz.jg.-Abt.	Panzerjäger-Abteilung
Pz.Regt.	Panzer-Regiment
PZAOK	Panzerarmee
Pzgr	Panzergranate (armour-piercing round)
Pzkw	Panzerkampfwagen (armoured fighting vehicle or tank)
Sd.Kfz.	Sonderkraftfahrzeug (special military vehicle)
sfl.	Selbstfahrlafette (self-propelled gun)
SPW	Schützenpanzerwagen (armoured infantry vehicle)
SR	Schützen-Regiment (Motorized Infantry)
TP	Tropisch (tropical)
V.A.	Vorausabteilung (advanced guard battalion)
V.S.	Verbrauchssatz (unit of issue, logistics)
Zgkw.	Zugkraftwagen (half-track pulling vehicles)

ITALIAN TERMINOLOGY

ACIT	Armata Corazzata Italo-Tedesca (Italian-German Tank Army)
A.S.	Africa Settentrionale (Northern Africa)
Btgl. Carri L.	Battaglione Carri Leggeri (Light tank battalion)
Btgl. Carri M.	Battaglione Carri Medi (Medium tank battalion*)*
CC.NN	Camicie Nere (Blackshirts, Fascist militia units)
E.P.	Effetto Pronto (HEAT-type projectiles)
SIM	Servizio Informazioni Militari (Military Intelligence)
Superasi	Commando Superiore Africa Settentrionale (Commander-in-chief North Africa)

AMERICAN TERMINOLOGY

AFAB	Armored Field Artillery Battalion
AIB	Armored Infantry Battalion (mechanized infantry)
AR	Armor (Battalion)
CC (A, B, C)	Combat Command A, B or C
FAB	Field Artillery Battalion
GMC	Gun Motor Carriage
RCT	Regimental Combat Team

RANK TABLE

Royal Italian Army	German Army	British Army	US Army Rank
Maresciallo d'Italia	Generalfeldmarschall	Field Marshal	General of the Army
Generale d'Armata	Generaloberst	General	General
Generale di Corpo d'Armata	General der (Panzertruppe)	Lieutenant General	Lieutenant General
Generale di Divisione	Generalleutnant	Major General	Major General
Generale di Brigata	Generalmajor	Brigadier	Brigadier General
Colonnello Comandante			
Colonnello	Oberst	Colonel	Colonel
Tenente Colonnello	Oberstleutnant	Lieutenant Colonel	Lieutenant Colonel
Maggiore	Major	Major	Major
Primo Capitano			
Capitano	Hauptmann	Captain	Captain
Primo Tenente	Oberleutnant	First Lieutenant	First Lieutenant
Tenente	Leutnant	Second Lieutenant	Second Lieutenant
Sottotenente			

APPENDICES

APPENDIX 1: MAJOR TANK DELIVERIES TO NORTH AFRICA, 1942

AXIS

Date	Port	Equipment	Unit
5 January 1942	Tripoli M.43 Convoy	9 Pz II, 37 Pz III, 10 Pz IV 19 armoured cars	
11 January 1942	Tripoli	2 Pz II, 4 Pz III, 4 Pz IV, 3 Sd Kfz.6/3 Diana	
13 January 1942	Tripoli	46 M14/41 tanks 20 Semovente da 75/18	X Battaglioni Carri Medi
14–15 January 1942	Tripoli		XI Battaglioni Carri Medi
23 January 1942	Tripoli	4 Pz II, 9 Pz III	
24 January 1942	Tripoli T.18 Convoy	55 Pz III, 11 Pz IV	
29 January 1942	Tripoli	3 Pz II, 20 Pz III, 4 Pz IV	
2 February 1942	Tripoli	2 Pz II, 11 Pz III	
11 February 1942	Tripoli	13 Pz III	
7 May 1942	Tripoli		LI Battaglioni Carri Medi
Late May		30 Semovente da 75/18	
July 1942		27 Marder III	Panzerjäger-Abteilung 33, 39
5 August 1942	Bengazi		XIII Battaglioni Carri Medi ('Ariete')
November 1942	Sirte	–	XIV Battaglioni Carri Medi
23 November 1942	Bizerte	3 Tiger I	schwere Panzer-Abteilung 501
3/9/15 December 1942	Tunis		XV Battaglioni Carri Medi

ALLIES

Date	Port	Equipment	Unit
January 1942	WS. 12z	55 cruiser	Also 38 Daimler/Humber armoured cars

APPENDIX 2: TANKS IN NORTH AFRICA, 1942–43

AXIS TANKS

	M13/40	Pz IIIL	Pz IV F2/G	Tiger I
Introduced	July 1940	June 1942	April 1942	August 1942
Weight (metric tons)	14	22.5	23.6	57.0
Crew	4	5	5	5
Engine	Fiat SPA 8T	Maybach HL120 TRM	Maybach HL120TRM	Maybach HL230 P45
Horsepower	125	265	265	700
HP: weight ratio	8.9	11.6	11.5	12.2
Suspension	Leaf Spring	Torsion Bar	Torsion Bar	Torsion Bar
Max speed (road) (kph)	31	40	40	38
Average speed (cross-country) (kph)	15	20	15–20	15
Fuel type	Diesel	Gasoline	Gasoline	Gasoline
Fuel capacity (litres)	210	320	470	540
Range (km)	200 (road) 120 (CC)	155 (road) 95 (CC)	210 (road) 130 (CC)	100 (road) 57 (CC)
Track width (cm)	26	40	40	72.5
Main gun	47mm L/32	5cm Kw.K 39 L/60	7.5cm Kw.K 40 L/43	8.8cm Kw.K 36 L/56
Other weapons	3 8mm MG Breda	1 MG34	2 MG34	2 MG34
Ammo type	APBC, HE	APCR, APCBC, HE	APCR, APCBC, HE	APCR, APCBC, HE
Ammunition	85	78	87	92
Frontal armour (mm)	30–40	50+20	50–80	70–100
Side armour (mm)	25	14.5	20-30	80
Rear armour (mm)	25	50	40	60–80
Radio	None*	Fu 5	Fu 5	Fu 5

Note: (CC) cross-country
+ indicates possible bolt-on additional armour plating
* Marelli RF 1 CA radio (mid-1941)

ALLIED TANKS

	Mk VI Crusader I	Crusader III	M3A1 Grant/Lee	M4A1 Sherman	Churchill Mk III
Introduced	January 1941	May 1942	April 1941	February 1942	February 1942
Weight (metric tons)	18.8	19.7	28.0	30.4	38.5
Crew	4	3	6	5	5
Engine	Nuffield 45 V Angle	Nuffield 45 V Angle	Continental Wright R-975	Continental Wright R-975	Bedford 12 cyl
Horsepower	340	340	400	400	325
HP: weight ratio	18.0	17.2	14.2	13.1	8.45
Suspension	Christie	Christie	Volute springs	Volute springs	Coil springs
Max speed (road) (kph)	42	42	40	40	17
Average speed (cross-country) (kph)	24	24	26	26	12
Fuel type	Gasoline	Gasoline	Gasoline	Gasoline	Gasoline
Fuel capacity (litres)	455	455	662	662	682
Range (km)	200 (road) 145 (CC)	200 (road) 145 (CC)	193 (road) 125 (CC)	193 (road) 125 (CC)	123 (road)
Track width (cm)	27.1	27.1	42.0	42.0	55.8
Main gun	2-pounder (40mm)	6-pounder (57mm)	75mm	75mm	6-pounder (57mm)
Other weapons	1 7.92mm coax (Besa)	1 7.92mm coax (Besa)	1 37mm 3 7.62mm	3 7.62mm	1 7.92mm coax (Besa)
Ammo type	AP-T	AP-T, APC, HE	AP-T, APC, AP Composite, HE	AP-T, APC, AP Composite, HE	AP-T, APC, HE
Ammunition	130	73	50+	97	85
Frontal armour (mm)	27–40	34–50	38–76	50–76	89–101
Side armour (mm)	20–28	23–28	38–50	38–50	63–76
Rear armour (mm)	20–28	28–30	38–50	38–50	50–76
Radio	No. 11 W/T				

APPENDIX 2B: PENETRATION OF TANK AND ANTI-TANK GUNS, 1940–43

AXIS WEAPONS

Weapon	Round	Projectile Weight (kg)	Muzzle Velocity (m/Sec)	Penetration at range (mm)			
				100	500	1,000	1,500
47mm L/32	Perforante 35 (AP)	1.42	630	55	43	31	23
	Perforante 39 (APBC/HE)	1.44	630	39	35	30	25
3.7cm Pak L/45	Pzgr (AP-T)	0.68	762	35	29	22	20
	Pzgr 39 (APCBC-HE)			41	35	29	24
	Pzgr 40 (APCR-T, HK)	0.35		64	34	–	–
4.7cm Pak L/50	Pzgr (AP)	1.65	775	52	47	40	35
5cm KwK L/42	Pzgr (AP-T)	2.06	685	53	43	32	24
	Pzgr 39 (APCBC-HE)			54	46	36	28
	Pzgr 40 (APCR-T, HK)	0.925	1,050	94	55	21	–
5cm KwK L/60	Pzgr (AP-T)	2.06	835	67	57	44	34
	Pzgr 39 (APCBC-HE)			69	59	47	37
	Pzgr 40 (APCR-T, HK)	0.925	1,180	130	72	38	–
7.5cm KwK L/24	K.Gr.rot.Pz. (APC)	6.8	385	41	38	35	32
	Gr. 38 HI/A (HEAT)	4.4	450	70	–	–	–
7.5cm KwK L/43	Pzgr 39 (APCBC-HE)	6.8	740	99	91	81	72
	Pzgr 40 (APCR-T, HK)	4.1	990	126	108	87	–
7.62cm Pak 36(r)	Pzgr 39 (APCBC-HE)	7.54	740	106	98	88	79
8.8cm Flak L/56	Pzgr 39 (APCBC-HE)	10.2	820	120	110	100	91
	Pzgr 40 (APCR-T)	7.5	935	171	156	138	123

Note: The Germans began to deploy tank and anti-tank rounds with Tungsten cores (APCR) in September 1940, beginning with the 3.7cm Pzgr Patr 40, which offered greatly improved penetration capability. In March 1941, the 5cm Pzgr Patr 40 was introduced. However, due to the scarcity of Tungsten, only about 5–6 per cent of 3.7cm and 5cm rounds in June 1941 were of this type.
Panzergranate 39 (Pzgr 39), standard anti-tank round with steel core.
Panzergranate 40 (Pzgr 40), armour-piercing composite rigid (APCR) anti-tank round with Tungsten core. Also referred to as *Hartkern* (hard core) munition or HK.

ALLIED WEAPONS

Weapon	**Round**	**Projectile Weight (kg)**	**Muzzle Velocity (m/Sec)**	Penetration at range (mm) against RHA			
				100	500	1,000	1,500
2-pounder (40mm)	AP-T	1.08	792	50	42	36	17
	APHV-T	1.08	853	57	51	41	28
37mm L/53	AP-T (M74)	0.87	884	85	65	45	24
	APC-T (M51)	0.87	853	66	44	26	15
6-pounder L/43 (57mm)	AP	2.86	853	97	82	66	53
	APC		846	106	89	72	59
75mm L/31	AP-T (M72)	6.32	563	95	81	66	54
	APC-T (M61)	6.63		78	72	65	58
75mm L/40	AP-T (M72)	6.32	618	109	92	76	62
	APC-T (M61)	6.63		102	95	86	79

Note: HVAP High-velocity armour piercing (US name for APCR). The American-made M51 APC projectile was produced in several variants (steel and brass cartridge cases, rounded or pointed ballistic caps, different propellant) in 1941–43, which resulted in different performance characteristics.

APPENDIX 3: ORDERS OF BATTLE FOR ARMOURED UNITS IN NORTH AFRICA, 1942–43

21 JANUARY 1942, ROMMEL'S COUNTEROFFENSIVE

Axis

- Commander in Chief North Africa (Superasi) Generale Ettore Bastico
- Panzergruppe Afrika (General der Panzertruppe Erwin Rommel)
- Deutsches Afrika Korps (DAK) (Generalleutnant Ludwig Crüwell)
  - 15. Panzer-Division (Generalmajor Gustav von Vaerst)
    - Kampfgruppe Cramer
      - Panzer-Regiment 8 (Oberst Hans Cramer)
        - I./ Panzer-Regiment 8 (Hauptmann Johannes Kümmel)
        - II./ Panzer-Regiment 8 (Hauptmann Wolfgang Wahl)
        - Total strength: 12 Pz II, 61 Pz III, 7 Pz IV, 1 Pz Bef
      - Support: I./Flak-Regiment 18 [7 8.8cm]
  - 21. Panzer-Division (Generalmajor Karl Böttcher)
    - Kampfgruppe Mildebrath
      - Panzer-Regiment 5 (Major Werner Mildebrath)
        - I./ Panzer-Regiment 5
        - II./ Panzer-Regiment 5
        - Total strength: 7 Pz II, 16 Pz III, 3 Pz IV, 2 Pz Bef
      - Maschinengewehr-Bataillon 8
  - Gruppe Marcks (Oberstleutnant Werner Marcks)
    - Panzerjäger-Abteilung 605 (sfl.) [Panzerjäger I/3 Diana]
    - II./ Schützen-Regiment 104; I, II./Schützen-Regiment 155
    - Support: one Italian artillery battalion, 3./Flak-Regiment 35 [8.8cm]
- Italian Corpo d'Armata di Manovra (CAM) (Generale di Corpo d'Armata Francesco Zingales)
  - 132ª Divisione Corazzata 'Ariete' (Generale di Divisione Mario Balotta)
    - 132º Reggimento Carri (Tenente Colonnello Enrico Maretti)
      - VIII Battaglione Carri Medi [M13/40]
      - IX Battaglione Carri Medi [M13/40]
      - X Battaglioni Carri Medi (Maggiore Luigi Pinna) [M14/41]
      - Total: 89 tanks
    - 132º Reggimento Artiglieria [24 75/27, 10 105/28]
      - IV Gruppo [8 90/53 guns]
      - V, VI Gruppo [10 Semovente da 75/18 each]
  - 101ª Divisione Motorizzate 'Trieste' (Generale di Divisione Alessandro Piazzoni)

Allies

- Middle East Command (General Claude Auchinleck)

8th Army (Lieutenant General Neil M. Ritchie)
XIII Corps (Lieutenant General Alfred Godwin-Austen)
    4th Indian Division
    1st Armoured Division (Major General Frank Messervy)
        2nd Armoured Brigade (Colonel Raymond Briggs)
            9th Queen's Royal Lancers (Lieutenant Colonel John R. MacDonell)
            10th Royal Hussars (Lieutenant Colonel Charles B. Harvey)
            2nd Dragoon Guards (Queen's Bays) (Lieutenant Colonel George W. C. Draffen)
            Support: 1 infantry battalion (9 Battalion RB), 2 artillery battalions, 1 anti-tank battalion
            Total tanks: about 130 tanks (75 Crusader/55 Stuart)
        1st Support Group (Brigadier Claude M. Vallentin)
            Arthur Force (3 CLY/4 CLY) (Major William A. B. Onslow) [24 Stuart]
            Support: two infantry battalions (2 KRRC, 1 Battalion RB), one artillery battalion, one anti-tank battalion
        200th Guards Brigade (Brigadier John Marriott)
            B Squadron, 11th Hussars (Major William Wainman)
            two infantry battalions, two artillery battalions, three anti-tank batteries
        11th Hussars (Lieutenant Colonel William I. Leetham) [Humber]
        12th Royal Lancers (Lieutenant Colonel Eaton O. Burne) [Humber]

26 MAY 1942, GAZALA

Axis

Commander in Chief North Africa (Superasi) Generale Ettore Bastico
Panzerarmee Afrika (General der Panzertruppe Erwin Rommel)
Deutsches Afrika Korps (DAK) (General der Panzertruppen Ludwig Crüwell)[1]
    Kampfgruppe Kiehl
        Kampfstaffel [5 Pz II], Captured Tank Company [12 Stuart]
        One anti-tank platoon [3 5cm], one reconnaissance platoon [4 Sd.Kfz. 222]
    Kampfgruppe Hecker
        Sonderverband 288 [3 StuG III Ausf C/D]
        III Battaglione, San Marco Regiment
    15. Panzer-Division (Generalmajor Gustav von Vaerst)[2]
        Panzer-Regiment 8 (Oberstleutnant Willi Teege)

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[1] Captured 29 May 1942. Replaced by Generalleutnant Walter Nehring.
[2] Wounded in action, 27 May 1942.

I./ Panzer-Regiment 8 (Hauptmann Johannes Kümmel)
II./ Panzer-Regiment 8 (Hauptmann Wolfgang Wahl)
Total strength: 29 Pz II, 131 Pz IIIH, 3 Pz IIIJ, 22 Pz IVE, 4 Pz Bef)
Support: Three infantry and three artillery battalions [28 10.5cm, 8 15cm], one anti-tank battalion [18 5cm], I./Flak-Regiment 43 [12 8.8cm], one *Pionier-Bataillon*
21. Panzer-Division (Generalmajor Georg von Bismarck)
Panzer-Regiment 5 (Oberst Gerhard Müller)
I./ Panzer-Regiment 5 (Major Werner Mildebrath)
II./ Panzer-Regiment 5 (Oberstleutnant Martin)[1]
Total strength: 29 Pz II, 107 Pz IIIH, 15 Pz IIIJ, 19 Pz IVE, 4 Pz Bef)
Support: Three infantry and three artillery battalions [24 10.5cm, 4 10cm, 8 15cm], one anti-tank battalion [15 5cm], I./Flak-Regiment 18 [12 8.8cm], one *Pionier-Bataillon*
90. leichte Afrika Division (Generalmajor Ulrich Kleeman)
Aufklärungs-Abteilung 3 (Major Hans von Luck)
Aufklärungs-Abteilung 33
580. Panzeraufklärungs Kompanie [8 Sd.Kfz. 222/223]
605. Panzerjäger Abteilung (sfl.) [18 Panzerjäger I, 9 Sd.Kfz 6/3 'Diana']
Support: Two infantry battalions, one mixed artillery battalion [12 76.2mm), one anti-tank battalion [18 5cm], one *Pionier-Battailon*, one Flak detachment [8.8cm]
Italian XX Corpo d'Armata (Generale di Corpo d'Armata Ettore Baldassare)[2]
132ª Divisione Corazzata 'Ariete' (Generale di Divisione Giuseppe de Stefanis)
132º Reggimento Carri (Tenente Colonnello Enrico Maretti)[3]
VIII Battaglione Carri Medi [52 M13/40]
IX Battaglione Carri Medi (Tenente Colonnello Pasquale Prestisimone)[4] [52 M14/41]
X Battaglione Carri Medi [52 M14/41]
Note: regiment has a total of 176 medium tanks
III Battaglione Carri Leggeri 'Lancieri di Novara' [33 L6]
III Armoured Car Battalion 'Nizza Cavalleria' [40 AB 41]
Support: Three infantry battalions, one engineer battalion, three artillery battalions [24 75/27, 10 105/28], two self-propelled artillery battalions [18 Semovente da 75/18] and two dual-purpose anti-aircraft battalions [8 8.8cm, 10 90/53 guns]

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[1] Died of wounds, 27 May 1942.
[2] Killed in action, 26 June 1942.
[3] Maggiore Luigi Pinna temporarily commanded the regiment, 27 May–15 June 1942.
[4] Captured, 27 May 1942.

- 101ª Divisione Motorizzate 'Trieste' (Generale di Divisione Arnaldo Azzi)
    - XI Battaglione Carri Medi [52 M14/41]
    - VIII Bersaglieri armoured car battalion [40 AB41]
    - Support: Four infantry, one engineer and six artillery battalions [20 75/27, 24 100/17, 20 15cm sFH18]

- Gruppe Crüwell (Generalleutnant Ludwig Crüwell)
    - Italian X Corpo d'Armata (Generale di Corpo d'Armata Benvenuto Gioda)
        - Divisione Fanteria 'Pavia'
        - Divisione Fanteria 'Brescia'
        - 9° Reggimento Bersaglieri (mot.): two infantry battalions
    - Italian XXI Corpo d'Armata (Generale di Corpo d'Armata Enea Navarini)
        - Kampfgruppe Menny (Oberst Erwin Menny)
            - Four infantry battalions
        - 102ª Divisione Motorizzata 'Trento'
        - Divisione Fanteria 'Sabratha'
        - 7° Reggimento Bersaglieri (mot.): two infantry battalions

Allies

- Middle East Command (General Claude Auchinleck)
- 8th Army (Lieutenant General Sir Neil Ritchie)
    - XIII Corps (Lieutenant General William H. E. Gott)
        - 50th Infantry Division (Major General William H. Ramsden)
            - B/42 RTR (Major Charles E. J. Godwin)[1] [12 Matilda, 2 Matilda CS]
            - 44 RTR (Lieutenant Colonel C. R. Reynolds) [40 Valentine III, 6 Matilda CS]
            - 6 SAACR [40 Marmon-Harrington III]
            - Ten infantry and four artillery battalions [72 25-pounder, 16 114mm guns], three anti-tank batteries [36 2-pounder]
        - 1st South African Division
            - A, C/42 RTR (Lieutenant Colonel Aleck R. Martin)[2] [28 Matilda, 6 Matilda CS]
            - 3rd SAACR [58 Marmon-Harrington III]
            - Nine infantry and six artillery battalions [96 25-pounder, 32 114mm guns], two anti-tank regiments [72 2-pounder]
        - 2nd South African Division
            - 7th SA Reconnaissance Battalion [55 Marmon-Harrington III]
            - Eight infantry and two artillery battalions [48 25-pounder]

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[1] Killed in action, 1 June 1942.

[2] Wounded, 30 May 1942, replaced by Major J. C. Kent.

1st Army Tank Brigade (Brigadier Walter O'Carroll)[1]

8 RTR (Lieutenant Colonel F. K. Brooke)[2] [40 Valentine III, 6 Matilda CS]

32nd Army Tank Brigade (Brigadier Arthur C. Willison)

4 RTR (Lieutenant Colonel William R. Reeves)[3] [40 Valentine, 6 Matilda CS]

7 RTR (Lieutenant Colonel Henry R. B. Foote)[4] [40 Matilda, 6 Matilda CS]

Corps troops:

11th Hussars (Lieutenant Colonel William I. Leetham)

XXX Corps (Lieutenant General Charles W. Norrie)

1st Armoured Division (Major General Herbert Lumsden)

2nd Armoured Brigade (Brigadier Raymond Briggs)

10th Hussars (Lieutenant Colonel Charles B. Harvey) [32 Crusader, 12 Grant, 2 Stuart, 1 CS]

9th Lancers (Lieutenant Colonel John R. MacDonell) [32 Crusader, 13 Grant, 2 Stuart, 1 CS]

Queen's Bays (Lieutenant Colonel George W. C. Draffen) [32 Crusader, 12 Grant, 2 Stuart, 1 CS]

Support: one infantry battalion (1 RB), one artillery battalion (11 RHA [24 25-pounders]), one anti-tank battery [16 6-pounder], two AA batteries [24 40mm]

22nd Armoured Brigade (Brigadier William G. Carr)

2 RGH (Lieutenant Colonel Normand A. Birley)[5] [32 Crusader, 12 Grant, 4 CS]

3 CLY (Lieutenant Colonel Anthony P. G. Smith) [32 Crusader, 12 Grant, 4 CS]

4 CLY (Lieutenant Colonel Francis G. B. Arkwright) [32 Crusader, 12 Grant, 4 CS]

C/12th Royal Lancers (Major Bruce M. H. Shand)[6] [18 Humber III]

Support: one artillery battalion (107 RHA [24 25-pounders]), one anti-tank battery [16 6-pounder], one reconnaissance battalion

201st Guards (Motor) Brigade (Brigadier John C. Marriott): 3 infantry battalions

Support: three infantry battalions, one anti-tank battery [16 6-pounder], one artillery battalion (2 RHA [24 25-pounders])

Division Control:

[1] Captured, 1 June 1942.

[2] Wounded, 29 May 1942, replaced by Major J. G. S. Compton.

[3] Captured, 20 June 1942.

[4] Captured, 20 June 1942. Awarded Victoria Cross.

[5] Killed in action, 6 June 1942.

[6] Captured, 11 June 1942.

1st Royal Dragoons [58 Marmon-Harrington III]

7th Armoured Division (Major General Frank Messervy)[1]

4th Armoured Brigade (Brigadier George W. Richards)

3 RTR (Lieutenant Colonel George P. Roberts)[2] [19 Grant, 16 Stuart]

5 RTR (Lieutenant Colonel Robbie D. W. Uniacke)[3] [26 Grant, 18 Stuart]

8th Hussars (Lieutenant Colonel Gerald P. Kilkelly)[4] [24 Grant, 16 Stuart]

Support: one infantry battalion (1 KRRC), one artillery battalion (1 RHA) [24 25-pounders], one anti-tank battery [16 6-pounder]

7th Motor Brigade Group (Colonel James Renton): 3 infantry, 1 artillery battalion (4 RHA) [24 25-pounders], one anti-tank battery [16 6-pounder]

1ère Brigade Française Libre (Général de Brigade Marie Pierre Koenig): 5 infantry, 1 artillery battalion [24 75mm]

Division Control:

1 KDG (Lieutenant Colonel Donald McCorquodale) [58 Marmon-Harrington III]

4 SAACR [58 Marmon-Harrington III]

Under XXX Corps control:

3rd Indian Motor Brigade Group (Brigadier Anthony Filose): three motorized cavalry battalions, one artillery battalion [16 25-pounder], one anti-tank battery [16 2-pounder]

29th Indian Brigade Group: three infantry battalions, one artillery battalion [24 25-pounder], two anti-tank batteries [37mm/2-pounder]

Under army command:

1st Armoured Brigade (Brigadier Arthur Francis Fisher)

4th Hussars (Lieutenant Colonel R. B. Sheppard) [24 Grant, 20 Stuart]

1 RTR (Lieutenant Colonel Frank Brown) [23 Grant, 20 Stuart]

6 RTR (Lieutenant Colonel G. E. Knox-Peebles) [24 Grant, 16 Stuart]

Support: one infantry battalion, one artillery battalion (104 RHA) [24 2-pounder]

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[1] Relieved of command, 19 June 1942, replaced by Renton.

[2] Wounded, 6 June 1942. Replaced by Lieutenant Colonel Peter Pyman.

[3] Killed in action, 2 June 1942.

[4] Captured, 28 June 1942.

1 JULY 1942, RUWEISAT RIDGE

Axis

- Commander in Chief North Africa (Superasi) Generale Ettore Bastico
- Panzerarmee Afrika (General der Panzertruppe Erwin Rommel)
- Deutsches Afrika Korps (DAK) (Generalleutnant Walter Nehring)
  - 15. Panzer-Division (Oberst Eduard Crasemann)
    - Panzer-Regiment 8 (Oberstleutnant Willi Teege)[1]
      - Panzer-Kompanie Kümmel (Hauptmann Johannes Kümmel)
    - Total strength [17 tanks]
    - Schützen-Regiment 115 (200 men)
  - 21. Panzer-Division (Generalmajor Georg von Bismarck)
    - Panzer-Regiment 5 (Oberst Gerhard Müller)
      - I./ Panzer-Regiment 5 (Major Werner Mildebrath)
      - Total strength: [15 Pz III short, 6 Pz III long, 1 Pz IV]
    - Schützen-Regiment 104 (300 men)
  - 90. leichte Afrika Division (Generalmajor Ulrich Kleeman)
    - Aufklärungs-Abteilung 580
    - Kampfgruppe Menton
      - Sonderverband 288: one motorized infantry battalion, one heavy weapons battalion
    - leichte Infanterie-Regimenter 155, 200, 361
    - Support: Panzerjäger-Abteilung 605 [small number of Panzerjäger I and Diana]; Flak-Bataillon 606 (Major Briel)
  - Italian XX Corpo d'Armata (Generale di Divisione Giuseppe de Stefanis)
    - 132ª Divisione Corazzata 'Ariete' (Generale di Divisione Francesco Antonio Arena)
      - 132º Reggimento Carri (Tenente Colonnello Enrico Maretti)
      - IX, X, XIII Battaglione Carri Medi
      - III Battaglione Carri Leggeri 'Lancieri di Novara' [L6]
      - III Gruppo Squadroni Corazzato 'Nizza Cavalleria' [AB 41]
    - 101ª Divisione Motorizzate 'Trieste' (Generale di Divisione Arnaldo Azzi)
      - XI Battaglione Carri Medi [M14/41]
      - VIII Reggimento Bersaglieri [AB41]
    - 133ª Divisione Corazzata 'Littorio' (Generale di Divisione Gervasio Bitossi)
      - 133º Reggimento Carri
      - XII, LI Battaglione Carri Medi
  - Italian XXI Corpo d'Armata (Generale di Divisione Enea Navarini)
    - 102ª Divisione Motorizzate 'Trento' (Generale di Brigata Francesco Scotti)
      - 7° Reggimento Bersaglieri

Allies

- Middle East Command (General Claude Auchinleck)
- 8th Army (Lieutenant General Sir Neil Ritchie)

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[1] Wounded in action, 16 July 1942.

XXX Corps (Lieutenant General Charles W. Norrie)[1]
  1st South African Division (Major General Daniel H. Pienaar)
  6th New Zealand Brigade
  18th Indian Infantry Brigade (Lieutenant Colonel Kenneth F. May)[2]
    Support: 42 RTR [7 Matilda], 23 25-pounder guns, 16 6-pounder guns
  Robcol (Brigadier Robert P. Waller) [one infantry company, one field artillery regiment with 17 25-pounders, one anti-tank battery with 6 6-pounders, one AA detachment with 4 40mm]
  Under Corps:
    44 RTR (Lieutenant Colonel E. D. Rash) [Valentine]
XIII Corps (Lieutenant General William H. E. Gott)
  1st Armoured Division (Major General Herbert Lumsden)[3]
    4th Armoured Brigade (Brigadier Arthur F. Fisher)
      1 RTR (Lieutenant Colonel Frank Brown) [c. 35 Stuart]
      6 RTR (Lieutenant Colonel Henry M. Liardet) [17 Grant, 11 Stuart]
      8 RTR (Lieutenant Colonel James G. S. Compton)[4] [12 Valentine]
    22nd Armoured Brigade (Brigadier William G. Carr)
      G Squadron, 2 RGH
      C/4th Hussars [8 Lee, 4 Grant]
      Composite squadron Queen's Bays and 3 CLY [Grants]
      4 CLY (Lieutenant Colonel Francis G. B. Arkwright)[5] [Grants]
    12th Royal Lancers [Humber III]
    Support: two motor infantry battalions (1KRRC, 1 RB), two artillery regiments (1 RHA, 2 RHA)
    Total tanks (119): 38 Grant/Lee, 61 Stuarts, 12 Valentines, 8 Crusaders
  7th Armoured Division (Major General James Renton)
    7th Motor Brigade (three infantry battalions, 2 KRRC, 9 KRRC, 2 RB and one field artillery regiment, 4 RHA)
Under 8th Army
  2nd Armoured Brigade (Brigadier Raymond Briggs)[6]
    10th Hussars (Lieutenant Colonel John P. Archer-Shee)

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[1] Replaced by Lieutenant General William Ramsden on 7 July.
[2] Captured, 1 July 1942.
[3] Wounded, 18 July 1942, temporarily replaced by Alexander Gatehouse.
[4] Wounded in action, 16 July 1942.
[5] Killed in action, 1 July 1942.
[6] Wounded in action, 20 July 1942. Replaced by Brigadier J. C. Currie.

30 AUGUST 1942, ALAM EL HALFA

Axis

Commander in Chief North Africa (Superlibia) Generale Ettore Bastico
Panzerarmee Afrika (General der Panzertruppe Erwin Rommel)
Deutsches Afrika Korps (DAK) (Generalleutnant Walter Nehring)[1]
    15. Panzer-Division (Generalmajor Gustav von Vaerst)
        Panzer-Regiment 8 (Oberstleutnant Werner Mildebrath)
            I./ Panzer-Regiment 8 (Hauptmann Johannes Kümmel)
            II./ Panzer-Regiment 8 (Hauptmann Zügener)
            Total strength: 15 Pz II, 43 Pz III Ausf H, 34 Pz III Ausf L, 3 Pz IV Ausf E, 13 Pz IV Ausf G, 2 Pz Bef (110)
        Panzerjäger-Abteilung 33 [Marder III/5cm Pak 38]
        Schützen-Regiment 115
    21. Panzer-Division (Generalmajor Georg von Bismarck)[2]
        Panzer-Regiment 5 (Oberst Gerhard Müller)
            I./ Panzer-Regiment 5
            II./ Panzer-Regiment 5
            Total strength: 14 Pz II, 50 Pz III Ausf H, 39 Pz III Ausf L, 7 Pz IV Ausf E, 14 Pz IV Ausf G, 4 Pz Bef (128)
        Panzerjäger-Abteilung 39 [Marder III/5cm Pak 38]
        Schützen-Regiment 104
    90. leichte Afrika Division (Generalmajor Ulrich Kleeman)
    Aufklärungsgruppen
        Panzer-Aufklärungs-Abteilung 3
        Panzer-Aufklärungs-Abteilung 33
        Aufklärungs-Abteilung (mot) 580
        RECAM

Italian XX Corpo d'Armata (Generale di Divisione Giuseppe de Stefanis)
    132ª Divisione Corazzata 'Ariete' (Generale di Divisione Adolfo Infante)
        132º Reggimento Carri (Tenente Colonnello Enrico Maretti)
    133ª Divisione Corazzata 'Littorio' (Generale di Divisione Carlo Ceriana Mayneri)
        133º Reggimento Carri
    101ª Divisione Motorizzata 'Trieste' (Generale di Divisione Francesco La Ferla)
        XI Battaglione Carri Medi [M14/41]
        VIII Reggimento Bersaglieri [AB41]
    Corps total: 244 medium tanks, 38 light tanks, 36 Semovente, 32 armoured cars
Italian X Corpo d'Armata (Generale di Divisione Federico Ferrari Orsi)
    Divisioni Fanteria 'Brescia', 'Folgore'
    Fallschirmjäger-Brigade Ramcke (three infantry battalions)
Italian XXI Corpo d'Armata (Generale di Divisione Enea Navarini)

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[1] Wounded in action, 31 August 1942. Replaced by Oberst Fritz Bayerlein.
[2] Killed in action, 31 August 1942.

- Divisioni Fanteria ‘Trento’, ‘Bologna’
- 164. leichte Afrika Division (Oberst Carl-Hans Lungershausen)
  - Panzergrenadier-Regimenter 125, 382, 433 (total nine infantry battalions)
  - Aufklärungs-Abteilung 220
  - Support: two artillery battalions, one *Pionier-Battaillon*

Allies

- Middle East Command (General Sir Harold Alexander)
- 8th Army (Lieutenant General Bernard Montgomery)
- Total armoured strength: 164 Lee/Grant, 169 Stuart, 197 Crusader, 163 Valentine
  - XXX Corps (Lieutenant General William H. Ramsden)
    - 9th Australian Division
    - 1st South African Division
    - 5th Indian Division
    - 23rd Armoured Brigade (Brigadier George W. Richards)
      - 40 RTR (Lieutenant Colonel James L. Finigan)
      - 46 RTR (Lieutenant Colonel Thomas C. A. Clarke)
      - 50 RTR (Lieutenant Colonel John E. Cairnes)
      - Total: 100 Valentines
      - One artillery battalion: 5 RHA
    - Under corps control:
      - G Squadron, 2 RGH [Crusader]
  - XIII Corps (Lieutenant General Brian Horrocks)
    - 2nd New Zealand Division
    - 44th Infantry Division (131, 133 Infantry Brigades)
    - 7th Armoured Division (Major General James Renton)
      - 4th Light Armoured Brigade (Brigadier William G. Carr)
        - 4th Hussars (Lieutenant Colonel R. C. H. Kidd) [50 Stuart]
        - 11th Hussars (Lieutenant Colonel W. I. Leatham)
        - 12th Royal Lancers [54 Humber III]
        - Support: one infantry battalion (1 KRRC) and 3 RHA (anti-tank)
      - 7th Motor Brigade (Brigadier Thomas J. B. Bosvile) (2 KRRC, 2 RB, 7 RB)
      - 10th Royal Hussars [41 Crusader]
      - KDG [57 armoured cars]
      - Three mobile columns based on 2 RB, 7 RB, 2 KRRC (each with one attached artillery battery and one A/T troop)
    - Division total: 122 tanks (Crusader, Stuart)
  - 10th Armoured Division (Major General Alexander Gatehouse)
    - 22nd Armoured Brigade (Brigadier George Roberts)
      - Royal Scots Greys (Lieutenant Colonel Ranulph T. W. Fiennes) [24 Grants, 24 Stuarts]
      - 1/6 RTR
      - F and H Squadrons 2 RGH/RHQ and B Squadron 5 RTR (Lieutenant Colonel W. M Hutton)
      - 3/4 CLY (Lieutenant Colonel H. Scott) [28 Grant, 27 Crusader]
      - Support: One infantry battalion (1 RB), one artillery battalion (1 RHA)

Total: 92 Grant, 34 Crusader, 40 Stuart (166)
8th Armoured Brigade (Brigadier Edward C. N. Custance)
3 RTR (Lieutenant Colonel Harold E. Pyman)
Nottinghamshire Yeomanry
Staffordshire Yeomanry
Support: one infantry battalion (1st Battalion The Buffs), two artillery regiments, one anti-tank regiment
Total: 72 Grant, 12 Crusader (84)

23 OCTOBER 1942, SECOND EL ALAMEIN

Axis

Commander in Chief North Africa (Superlibia) Generale Ettore Bastico
Panzerarmee Afrika (General der Panzertruppe Georg Stumme)[1]
Deutsches Afrika Korps (DAK) (Generalleutnant Wilhelm von Thoma)[2]
Under DAK control:
Aufklärungs-Abteilung 3 (Major Hans von Luck), Aufklärungs-Abteilung 33, Aufklärungs-Abteilung 580
Harko Afrika [7 artillery battalions with 80 guns/howitzers, incl. 9 21cm, 9 17cm K18 and 20 10cm sK18)
Flak-Regiment 135 (Luftwaffe) with three *Flak-Bataillone* (II./25, I./43, I.53; each authorized 18 8.8cm Flak)
Mixed 15. Panzer-Division/'Littorio' division Battle Groups:
15. Panzer-Division (Generalmajor Gustav von Vaerst)
Stab./Panzer-Regiment 8 (Oberst Willi Teege)[3] [6 Pz II, 1 Pz Bef]
Panzerjäger-Abteilung 33 [9 Marder III/12 5cm Pak 38]
707. sIG Kompanie (sfl) [6 sIG 33]
I./Flak-Regiment 33 [8 8.8cm]
Panzer-Pionier-Bataillon 33
133ª Divisione Corazzata 'Littorio' (Generale di Divisione Gervasio Bitossi)
Staff, 133º Reggimento Carri (Colonello Mario Martinelli)
Total: 115 M13/40 or M14/41
Staff, 12° Reggimento Bersaglieri (one anti-tank battalion)
III Gruppo squadroni/5º Reggimento 'Lancieri di Novara' [20 L-6 light tanks]
Support: two towed artillery battalions [12 75mm, 12 100mm], one anti-aircraft group [8 8.8cm Flak], one engineer battalion
Nord Kampfgruppe
I./Panzergrenadier-Regiment 115
Stab./ Panzer-Artillerie-Regiment 33
LI Battaglione Carri Medi (Maggiore Carlo Macchi) [38 M14/41]
Mitte Kampfgruppe (Kampfgruppe Schemmel)
II./ Panzer-Regiment 8 (Hauptmann Siemens) [3 Pz II, 19 Pz III Ausf H, 21 Pz III Ausf L, 1 Pz IV

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[1] Died, 24 October 1942. Temporarily replaced by von Thoma, then Rommel on 25 October.
[2] Captured, 4 November 1942.
[3] Killed in action, 2 November 1942.

Ausf E, 7 Pz IV Ausf G (51)]
Support: III./Panzergrenadier-Regiment 115; III./AR 33 [4 10cm sK18, 4 15cm sFH18]
IV Battaglione Carri Medi (Tenente Colonnello Rocco Casamassima) [38 M14/41]
DLVI Gruppo Semoventi [8 Semovente 75/18]
Support: XXIII Battaglione Bersaglieri/12° Reggimento Bersaglieri; XXIX Gruppo Artiglieria Contraerei [8.8cm Flak]
Süd Kampfgruppe
I./ Panzer-Regiment 8 (Hauptmann Otto Stiefelmayer)[1] [3 Pz II, 19 Pz III Ausf H, 21 Pz III Ausf L, 1 Pz IV Ausf E, 7 Pz IV Ausf G (51)]
Support: II./Panzergrenadier-Regiment 115; II./AR 33 [12 10.5cm l.FH18]
XII Battaglione Carri Medi (Capitano Constanzo Preve)[2] [38 M14/41]
Support: XXXVI Battaglione Bersaglieri/12° Reggimento Bersaglieri; DLIV Gruppo Semoventi [8 Semovente 75/18]
21. Panzer-Division (Generalmajor Heinz von Randow)
Panzer-Regiment 5 (Oberst Gerhard Müller)
I./ Panzer-Regiment 5 (Hauptmann Josef Rettemeier)
II./ Panzer-Regiment 5 (Hauptmann Otto-Friedrich Senfft von Pilsach)
Total strength: 18 Pz II, 43 Pz III Ausf H, 43 Pz III Ausf L, 6 Pz IV Ausf E, 15 Pz IV Ausf G, 3 Pz Bef (128)
Panzerjäger-Abteilung 39 [18 Marder III/17 5cm Pak 38]
Panzergrenadier-Regiment 104 (3 battalions)
Support: Artillerie-Regiment 155 (4 battalions), 708. sIG Kompanie (sfl) [6 sIG 33], Panzer-Pionier-Bataillon 200; I./Flak-Regiment 18 [8 8.8cm]
90. leichte Afrika Division (Generalmajor Theodor von Sponeck)
Panzergrenadier-Regimenter 155, 200, 361 (2 battalions each)
Panzerjäger-Abteilung 190 [11 5cm]
Panzerjäger Abteilung 605 (sfl.) [Diana, Panzerjäger I]
Support: Artillerie-Regiment 190 (2 battalions), Pionier-Bataillon (mot.) 900
164. leichte Afrika Division (Oberst Carl-Hans Lungershausen)
Panzergrenadier-Regimenter 125, 382, 433 (3 battalions each)
Aufklärungs-Abteilung 220
Panzerjäger-Abteilung 220 [18 5cm]
Support: Artillerie-Regiment 220 (1 battalion), Pionier-Bataillon 220
Italian XX Corpo d'Armata (Generale di Divisione Giuseppe de Stefanis)
132ª Divisione Corazzata 'Ariete' (Generale di Divisione Francesco Arena)
132° Reggimento Carri (Tenente Colonnello Enrico Maretti)
IX Battaglione Carri Medi (Tenente Colonnello Butta) [M14/41]
X Battaglione Carri Medi (Tenente Colonnello Luigi Pinna) [M14/41]
XIII Battaglione Carri Medi (Tenente Colonnello Renzo Baldini) [M14/41]
Total: 129 M14/41
8° Reggimento Bersaglieri (two infantry, one anti-tank battalion)
Support: 1 armoured cavalry squadron [12 AB-41 armoured cars], two self-propelled

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[1] Killed in action, 2 November 1942.

[2] Wounded in action, 2 November 1942.

artillery groups [16 Semovente da 75/18], four towed artillery battalions [24 75mm, 24 105mm], two anti-aircraft groups [8 8.8cm Flak, 8 90/53], one engineer battalion
101ª Divisione Motorizzata 'Trieste' (Generale di Divisione Francesco La Ferla)
- Reggimento Motorizzato 65, Reggimento Motorizzato 66 (2 battalions each)
- XI Battaglione Carri Medi (Maggiore Gabriele Verri) [34 M13/40]
- VIII Reggimento Bersaglieri [39 AB41]
- Support: two towed artillery battalions (12 75mm, 12 100mm), one motorized engineer battalion

Corps total: 278 medium tanks, 38 light tanks, 36 Semovente, 32 armoured cars

Allies

Middle East Command (General Sir Harold Alexander)
8th Army (Lieutenant General Bernard Montgomery)
Under Army command:
- B Squadron, 6 RTR (Major Denis J. Coulson) [10 Grant]
- 1st Army Tank Brigade (Brigadier Thomas R. Price)
  - 42 RTR [12 Matilda Scorpion]
  - 44 RTR [12 Matilda Scorpion]
- XXX Corps (Lieutenant General Oliver Leese)
  - 9th Australian Division
    - 40 RTR (Lieutenant Colonel James L. Finigan) [42 Valentine]
    - 9th Division Cavalry Regiment [15 Crusader II, 4 Stuart]
  - 51st (Highland) Infantry Division
    - 50 RTR (Lieutenant Colonel John E. Cairnes) [44 Valentine]
  - 2nd New Zealand Division (Major General Bernard Freyberg)
    - 2nd New Zealand Division Cavalry Regiment (Lieutenant Colonel James Sutherland) [29 Stuart]
    - 9th Armoured Brigade (Brigadier John Currie)
      - 3rd Hussars (Lieutenant Colonel Peter Farquhar) [12 Sherman, 9 Grant, 16 Crusader]
      - Royal Wiltshire Yeomanry (Lieutenant Colonel Peter T. W. Sykes)[1] [10 Sherman, 14 Grant, 13 Crusader]
      - Warwickshire Yeomanry (Lieutenant Colonel Guy Jackson) [13 Sherman, 14 Grant, 17 Crusader]
      - Support: one infantry battalion (14 Battalion, Sherwood Foresters)
      - Total: 36 Sherman, 37 Grant, 37 Crusader II/IICS, 12 Crusader III (122)
  - 1st South African Division
    - 8 RTR (Lieutenant Colonel J. L. Winberg) [51 Valentine]
  - 4th Indian Infantry Division
  - 23rd Armoured Brigade (Brigadier George W. Richards)
    - 46 RTR (Lieutenant Colonel Thomas C. A. Clarke) [49 Valentines]
    - Support: one self-propelled 25-pounder artillery battalion [16 Bishop]
- X Corps (Lieutenant General Herbert Lumsden)
  - 1st Armoured Division (Major General Raymond Briggs)

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[1] Wounded in action, both on 24 October. Replaced by Major Alistair Gibb, who was wounded on 2 November 1942.

2nd Armoured Brigade (Brigadier Arthur Fisher)
  2nd Dragoon Guards (Queen's Bays) (Lieutenant Colonel Alexander H. Barclay)
  9th Queen's Royal Lancers (Lieutenant Colonel Gerald H. Grosvenor)
  10th Royal Hussars (Lieutenant Colonel John P. Archer-Shee)[1]
  Support: one reinforced motorized infantry battalion (Yorkshire Dragoons)
  Total: 92 Sherman, 39 Crusader II/IICS, 29 Crusader III, 1 Grant (161)
7th Motor Brigade (Brigadier Thomas J. Bosvile)
  Kingforce (Major Norris King) [6 Churchill III]
  Three motorized infantry battalions (2 KRRC, 2 RB, 7 RB)
12th Royal Lancers [55 Daimler/Humber III armoured cars]
Support: three towed 25-pounder artillery regiments (2 RHA, 4 RHA), one self-propelled 105mm regiment (11 RHA (HAC) [24 M7], one anti-tank regiment, four RE field squadrons
10th Armoured Division (Major General Alexander Gatehouse)
8th Armoured Brigade (Brigadier Edward C. N. Custance)
  3rd RTR (Lieutenant Colonel Harold E. Pyman) [10 Sherman, 14 Grant, 16 Crusader II/III]
  Nottinghamshire Yeomanry/Sherwood Rangers Yeomanry (Lieutenant Colonel Edward Kellett) [11 Sherman, 20 Grant, 13 Crusader II/III]
  Staffordshire Yeomanry (Lieutenant Colonel James A. Eadie) [10 Sherman, 19 Grant, 15 Crusader II/III]
  Support: one motorized infantry battalion (1st Battalion, The Buffs)
  Total: 31 Sherman, 57 Grant, 33 Crusader II/IICS, 12 Crusader III (133)
24th Armoured Brigade (Brigadier Arthur G. Kenchington)
  41 RTR (Lieutenant Colonel J. B. Whitehead) [31 Sherman, 15 Crusader II/III]
  45 RTR (Lieutenant Colonel Sutherland C. Dumbreck) [31 Sherman, 15 Crusader II/III]
  47 RTR (Lieutenant Colonel George Parkes)[2] [31 Sherman, 15 Crusader II/III]
  Support: one motorized infantry battalion (11 KRRC)
  Total: 93 Sherman, 2 Grants, 28 Crusader II/IICS, 17 Crusader III (140)
133rd Infantry Brigade (Brigadier Alec W. Lee) (3 battalions)
1st Royal Dragoons (Lieutenant Colonel Anthony H. Pepys) [46 Daimler/Humber III armoured cars]
Support: four towed 25-pounder artillery regiments (1 RHA, 5 RHA, 104 RHA, 98 RA), one anti-tank regiment, five RE field squadrons
XIII Corps (Lieutenant General Brian Horrocks)
44th Infantry Division
50th Infantry Division
7th Armoured Division (Major General John Harding)
4th Light Armoured Brigade (Brigadier Marcus G. Roddick)
  Royal Scots Greys [14 Grants, 19 Stuarts]
  4th/8th Hussars [48 Stuart]
  11th Hussars [61 Humber III]
  2nd Derbyshire Yeomanry [50 armoured cars]

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[1] Wounded in action, 2 November 1942.
[2] Killed in action, 27 October 1942.

Support: one infantry battalion (1 KRRC)
Total: 14 Grant, 67 Stuart (81)
22nd Armoured Brigade (Brigadier George Roberts)
1 RTR (Lieutenant Colonel Edward C. Mitford) [24 Grant, 19 Stuart]
5 RTR (Lieutenant Colonel Walter M. Hutton) [24 Grant, 16 Crusader II/III]
4 CLY (Lieutenant Colonel Henry B. Scott) [9 Grant, 28 Crusader II/III]
Support: one infantry battalion (1 RB)
Total: 57 Grant, 19 Stuarts, 42 Crusader II/IICS, 8 Crusader III (126)
1st Free French Brigade Group
One tank company [14 Crusader], three infantry battalions, two artillery battalions
1st Household Cavalry Regiment [42 Marmon-Herrington III, 11 Daimler]
Support: three towed 25-pounder artillery regiments (3 RHA, 4 RHA, 97 RA), one anti-tank regiment, two RE field companies

KASSERINE PASS, 14–20 FEBRUARY 1943

Axis

5. Panzerarmee (Generaloberst Hans-Jürgen von Arnim)
Generalleutnant Heinz Ziegler
10. Panzer-Division (Generalmajor Friedrich Freiherr von Broich)
Kampfgruppe Reimann (Oberst Reimann)
1./schwere Panzer-Abteilung 501 (Oberleutnant Schmidt-Bornagius)[1] [6 Tiger, 9 Pz III Ausf N]
II./Panzer-Grenadier Regt. 86
Sturmgeschütz-Batterie 242 (Hauptmann Benz) [4 StuG III Ausf F]
Support: one Panzerjäger Kompanie, one assault gun battery (Panzer-Artillerie-Regiment 90), one engineer platoon
Kampfgruppe Gerhardt (Oberst Rudolf Gerhardt)
I./Panzer-Regiment 7 (Hauptmann Helmut Hudel)
II./Panzergrenadier-Regiment 69 (Gepanzert) (Major Pommé)
Support: one company each of Panzerjäger and engineers, one battery of four towed 10.5cm guns
Division control:
Panzer-Artillerie-Regiment 90 (three artillery battalions with 20 10.5cm, 4 10cm s.K18, 8 15cm sFH18; two Flak batteries with 12 8.8cm Flak 41)
21. Panzer-Division (Oberst Hans-Georg Hildebrandt)
Kampfgruppe Schütte (Major Paul Schütte)
II./Panzer-Regiment 5[2]
Panzerjäger-Abteilung 39/609 (sfl)
IV./ Panzergrenadier-Regiment 104
Support: two artillery batteries, 2 8.8cm Flak guns
Kampfgruppe Stenkhoff (Oberst Stenkhoff)
I./Panzer-Regiment 5 (Hauptmann Rohr)

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[1] Killed in action, 16 February 1943.
[2] This unit was formerly Panzer-Abteilung 190, which was redesignated in February.

Support: three towed artillery batteries [8 10.5cm, 4 15cm], 4 8.8cm Flak guns
Panzer-Aufklärungs-Abteilung 580
Kampfgruppe DAK (Generalmajor Kurt von Liebenstein)[1]
I./ Panzer-Regiment 8 (Hauptmann Hans-Günther Stotten) [26 tanks]
Panzergrenadier-Regiment Afrika (2 battalions)
Aufklärungs-Abteilung 33
Support: two towed artillery battalions, one Nebelwerfer battery, one Panzerjäger Kompanie [7.5cm]
131ª Divisione Corazzata 'Centauro' (Generale di Brigata Giovanni Magli)
Gruppo Bonfatti (Colonnello Luigi Bonfatti)
XVII Battaglione Carri Medi [22 M14/41]
Support: XIV Battaglione, 5º Reggimento Bersaglieri; one towed light artillery battalion, one Semovente battery

Allies

1st Army (Lieutenant General Kenneth A. N. Anderson)
Under Army control:
Combat Command B (Brigadier General Paul M. Robinett)
2-13 AR (Lieutenant Colonel Henry E. Gardiner) [20+ M3 medium, some M4] WIA
2-1 AR (Lieutenant Colonel James D. Alger)[2] [52 M4 medium] Alger POW
601 Tank Destroyer Battalion (Lieutenant Colonel Hershel D. Baker)
Support: one mechanized infantry battalion (2-6 AIB); one artillery battalion (27 FAB)
26th Armoured Brigade (Brigadier Charles A. L. Dunphie)
17/21st Lancers (Lieutenant Colonel Richard G. Hamilton-Russell)
2nd Lothian and Border Horse (Lieutenant Colonel Desmond O'Brien E. Ffrench-Blake)
Support: two infantry battalions (10th Battalion, RB, 2/5 Leicestershire), one towed field artillery battalion [22 25-pdr], one anti-tank battery [12 6-pounder], two troops armoured cars
US II Corps (Major General Lloyd Fredendall)
1st Armored Division (Major General Orlando Ward)
Combat Command A (Brigadier General Raymond E. McQuillin)
Lesouda Force (Lieutenant Colonel John K. Waters)[3]
G, 3-1 AR (Major Norman Parsons) [16 M4 medium]
2-168 Infantry
Djebel Ksaïra (Colonel Thomas D. Drake)[4]
3-168 Infantry
3-1 AR (Lieutenant Colonel Louis V. Hightower) [44 M4 medium]
1-6 AIB (Lieutenant Colonel William B. Kern)
A Company, 701st Tank Destroyer Battalion
B Company, 81st Reconnaissance Battalion
Support: one self-propelled 105mm artillery battalion (91 FAB) and one towed 155mm artillery battalion (2-17 FA)

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[1] Wounded, 17 February 1943. Replaced by Generalmajor Karl Bülowius.
[2] Captured, 15 February 1943.
[3] Captured, 14 February 1943.
[4] Captured, 16 February 1943.

Combat Command C (Colonel Alexander N. Stark)
G Company, 3-13 AR (Captain Herman T. McWatters) [16 M4] 3-6 AIB
B Company, 701 Tank Destroyer Battalion
Combat Command D (Colonel Robert V. Maraist)
3-13 AR (Lieutenant Colonel Ben G. Crosby) [M3 medium]
C Company, 701 Tank Destroyer Battalion
Support: one engineer company, two field artillery batteries
Division Reserve
1-13 AR (M3A1 light)
Under II Corps:
894th Tank Destroyer Battalion (Lieutenant Colonel Charley B. Eastburn)

MARETH LINE/EL GUETTAR, 20–26 MARCH 1943

Axis

5. Panzerarmee (Generaloberst Hans-Jürgen von Arnim)
10. Panzer-Division (Generalmajor Friedrich Freiherr von Broich)
Panzer-Regiment 7 (Oberst Rudolf Gerhardt)
Panzergrenadier-Regimenter 69, 86 (total four infantry battalions)
Support: Panzer-Artillerie-Regiment 90, Panzer-Pionier-Bataillon 49
21. Panzer-Division (Oberst Heinrich-Hermann von Hülsen)
Panzer-Regiment 5 (Hauptmann Rohr)
Panzergrenadier-Regimenter 47, 104 (total four infantry battalions)
Support: Panzer-Artillerie-Regiment 155, Panzerjäger-Abteilung 200, Panzer-Pionier-Bataillon 220
131ª Divisione Corazzata 'Centauro' (Generale di Brigata Giovanni Magli)
Gruppo Bonfatti (Colonnello Luigi Bonfatti)
XVII Battaglione Carri Medi [22 M14/41]
Support: XIV Battaglione, 5º Reggimento Bersaglieri; one towed light artillery battalion, one Semovente battery
Under Army Control:
schwere Panzer-Abteilung 504 (Major August Seidensticker) [12–18 Tigers]

1ª Armata (Generale d'Armata Giovanni Messe)
XX, XXI Corpo d'Armata
'Giovani Fascisti', 'Trieste', 'Spezia', 'Pistoia' divisions
90. Afrika Division (Generalmajor Theodor Graf von Sponeck)
164. leichte Afrika Division (Generalmajor Kurt Frieherr von Liebenstein)
Raggruppamento Sahariano Mannerini (Generale Alberto Mannerini)
Deutsche Afrika Korps (General der Panzertruppen Hans Cramer)
15. Panzer-Division (Generalmajor Willibald Borowitz)
Panzer-Regiment 8 (Oberst Josef Irkens) [18 Pz III, 14 Pz IV]
Panzer-Grenadier-Regiment 155 (three battalions)
Support: Panzer-Artillerie-Regiment 33, Panzer-Pionier-Bataillon 33

Allies

- 8th Army (Lieutenant General Bernard Montgomery)
  - XXX Corps (Lieutenant General Oliver Leese)
    - 51st (Highland) Infantry Division
      - 50 RTR (Lieutenant Colonel John E. Cairnes)[1] [52 Valentine]
    - 50th Infantry Division
    - 4th Indian Division
    - 23rd Armoured Brigade (Brigadier George W. Richards)
      - 40 RTR [Valentine] (Lieutenant Colonel James L. Finigan)
      - 50 RTR [51 Valentines] (Lieutenant Colonel John E. Cairnes)
  - New Zealand Corps (Lieutenant General Bernard Freyberg)
    - 8th Armoured Brigade (Brigadier Charles B. C. Harvey)
      - 3rd RTR (Lieutenant Colonel D. A. H. Silvertop)[2] [25 Sherman, 4 Grant, 22 Crusader II/III]
      - Nottinghamshire Yeomanry (Lieutenant Colonel Edward Kellett)[3] [23 Sherman, 4 Grant, 19 Crusader II/III]
      - Staffordshire Yeomanry (Lieutenant Colonel James A. Eadie) [28 Sherman, 3 Grant, 19 Crusader II/III]
      - Support: one motorized infantry battalion (1st Battalion, The Buffs)
      - Total: 76 Sherman, 13 Grant, 62 Crusader (151)
    - 1 KDG (Lieutenant Colonel Michael J. Lindsay)
    - Leclerc Force
    - 2nd New Zealand Division
      - 5th and 6th Brigades
      - Divisional Cavalry
- X Corps (Lieutenant General Brian Horrocks)
  - 1st Armoured Division (Major General Raymond Briggs)
    - 2nd Armoured Brigade (Brigadier Arthur Fisher)
      - 2nd Dragoon Guards (Queen's Bays) (Lieutenant Colonel Alexander H. Barclay) [Sherman/Crusader]
      - 9th Queen's Royal Lancers (Lieutenant Colonel Gerald H. Grosvenor) [Sherman/Grant/Crusader]
      - 10th Royal Hussars [Sherman/Grant/Crusader]
      - Support: one reinforced motorized infantry battalion (Yorkshire Dragoons)
      - Total: 67 Sherman, 13 Grant, 60 Crusader II/III
    - 7th Motor Brigade (Brigadier Thomas J. Bosvile)
      - Three motorized infantry battalions (1 KRRC, 2 RB, 7 RB)
    - 12th Royal Lancers [55 Daimler/Humber III armoured cars]
    - Support: three towed 25-pounder artillery regiments (2 RHA, 4 RHA), one self-propelled 105mm regiment (11 RHA (HAC)) [24 M7], one anti-tank regiment, two RE field squadrons
  - 7th Armoured Division (Major General George Erskine)
    - 22nd Armoured Brigade (Brigadier William R. N. Hinde)
      - 1 RTR (Lieutenant Colonel Edward C. Mitford)

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[1] Killed in action, 21 March 1943.

[2] Wounded in action, 22 March 1943. Replaced by Lieutenant Colonel Harold E. Pyman.

[3] Killed in action, 22 March 1943. Replaced by Lieutenant Colonel J. D. Player.

- 5 RTR (Lieutenant Colonel Walter M. Hutton)
- 4 CLY (Lieutenant Colonel Henry B. Scott) [22 Sherman, 19 Crusader]
- Support: one reinforced motorized infantry battalion
- 131st Lorried Infantry Brigade (Brigadier Lashmer G. Whistler)

- US II Corps (Lieutenant General George S. Patton, Jr)
- 1st Armored Division (Major General Orlando Ward)
  - Combat Command A (Brigadier General Raymond E. McQuillin)
  - Combat Command B (Brigadier General Paul M. Robinett)
    - 2-13 AR (Lieutenant Colonel Henry E. Gardiner) [M3]
    - 776th Tank Destroyer Battalion (Lieutenant Colonel James P. Barney, Jr) [M10]
    - Support: one mechanized infantry battalion (2-6 AIB), one artillery battalion (27 FAB)
  - Combat Command C (Colonel Alexander N. Stark)
    - 1-13 AR (Lieutenant Colonel Frank F. Carr) [M4]
    - Support: one mechanized infantry battalion (1-6 AIB), one infantry battalion (3/60 IN), two artillery battalions (58, 68 FAB), one engineer company
- 1st Infantry Division (Major General Terry Allen)
  - 601st Tank Destroyer Battalion (Lieutenant Colonel Hershel D. Baker) [31 M3, 5 M6 GMC]
  - 899th Tank Destroyer Battalion (Lieutenant Colonel Maxwell A. Tincher) [24 M10]

FINAL BATTLES, 20 APRIL–6 MAY 1943

Axis

- Heeresgruppe Afrika (Generaloberst Hans-Jürgen von Arnim)
- 5. Panzerarmee (General der Panzertruppen Gustav von Vaerst)
  - Division von Manteuffel
  - 334. Infanterie-Division
  - Hermann Göring Division
    - 3./Panzer-Regiment HG [2 Pz III, 8 Pz IV]
  - Kampfgruppe Irkens (Oberst Josef Irkens)
    - Panzer-Regiment 5, 7, 8 [about 5 Pz III/Pz IV]
    - schwere Panzer-Abteilung 504 [10–20 Tigers]
  - 15. Panzer-Division (Generalmajor Willibald Borowitz)
    - Panzer-Grenadier-Regiment 155 (three battalions)
    - Support: Panzer-Artillerie-Regiment 33, Panzer-Pionier-Bataillon 33
  - 10. Panzer-Division (Generalleutnant Friedrich Freiherr von Broich)
  - Panzergrenadier-Regimenter 69, 86 (total four infantry battalions)
  - Support: Panzer-Artillerie-Regiment 90, Panzer-Pionier-Bataillon 49
  - Deutsches Afrika Korps (General der Panzertruppen Hans Cramer)
    - 21. Panzer-Division (Generalmajor Heinrich-Hermann von Hülsen)
    - 1ª Divisione Fanteria 'Superga'
      - XV Battaglione Carri Medi [M14/41]
- 1ª Armata (Generale d'Armata Giovanni Messe)
  - XX, XXI Corpo d'Armata
    - 'Giovani Fascisti', 'Trieste', 'Spezia', 'Pistoia' divisions

        90. Afrika Division (Generalmajor Theodor Graf von Sponeck)
        164. leichte Afrika Division (Generalmajor Kurt Frieherr von Liebenstein)

Allies

18th Army Group (General Sir Harold Alexander)
1st Army (Lieutenant General Kenneth A. N. Anderson)
V Corps (Lieutenant General C. W. Allfrey)
    1st, 46th and 78th Infantry Divisions
    25th Tank Brigade (Brigadier Richard H. Maxwell)
        48 RTR (Lieutenant Colonel G. H. Brooks) [Churchill]
        142 RAC (Lieutenant Colonel Alexander S. Birkbeck)[1] [Churchill]
        North Irish Horse (Lieutenant Colonel David Dawney) [Churchill]
IX Corps (Lieutenant General John T. Crocker/Brian Horrocks)[2]
    4th Infantry Division (Major General John Hawkesworth)
        21st Army Tank Brigade (Brigadier Thomas Ivor-Moore)
            12 RTR (Lieutenant Colonel J. C. E. Harding) [Churchills]
            145 RAC [Churchills]
        10th and 12th Infantry Brigades (total six infantry battalions)
    4th Indian Infantry Division
    1st Armoured Division (Major General Raymond Briggs)
        2nd Armoured Brigade (Brigadier Arthur Fisher)
            2nd Dragoon Guards (Queen's Bays) (Lieutenant Colonel Alexander H. Barclay) [Sherman/Crusader]
            9th Queen's Royal Lancers (Lieutenant Colonel Gerald H. Grosvenor) [Sherman/Grant/Crusader]
            10th Royal Hussars [Sherman/Grant/Crusader]
        7th Motor Brigade (Brigadier Thomas J. Bosvile)
            Three motorized infantry battalions (1 KRRC, 2 RB, 7 RB)
    6th Armoured Division (Major General Charles F. Keightley)
        26th Armoured Brigade (Brigadier George P. Roberts)
            17/21st Lancers (Lieutenant Colonel Richard G. Hamilton-Russell)
            16/5th Lancers (Lieutenant Colonel W. R. Nicholson)
            2nd Lothians and Border Horse (Lieutenant Colonel Desmond O'Brien E. Ffrench-Blake)
    7th Armoured Division (Major General George Erskine)
        22nd Armoured Brigade (Brigadier William R. N. Hinde)
            1 RTR (Lieutenant Colonel Michael Carver)
            5 RTR (Lieutenant Colonel Walter M. Hutton)
            4 CLY (Lieutenant Colonel Henry B. Scott)
    131st Lorried Infantry Brigade (Brigadier Lashmer G. Whistler)
    46th Infantry Division
    51 RTR (Lieutenant Colonel R. B. Holden)
US II Corps (Lieutenant General Omar N. Bradley)

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[1] Killed in action, 23 April 1943.

[2] Injured, 27 April 1943. Replaced by Lieutenant General Brian Horrocks.

- 1st Armored Division (Major General Ernest N. Harmon)
    - CCA (Colonel Kent C. Lambert)
        - 3-1 AR, 1-13 AR (LTC Frank F. Carr)
        - Support: two mechanized infantry battalions (2-6 AIB, 3-6 AIB), two artillery battalions (58, 91 FAB)
    - CCB (Brigadier Paul M. Robinett)[1]
        - 2-13 AR (Gardiner), 3-13 AR (Crosby)
        - 776th Tank Destroyer Battalion
        - Support: one mechanized infantry battalion (1-6 AIB), one artillery battalion (27 FAB)
    - 81st Reconnaissance Battalion (Lieutenant Colonel Charles J. Hoy)
- 9th Infantry Division
    - 751st Tank Battalion [M-3 medium]
    - 894th Tank Destroyer Battalion
- 1st, 34th Infantry Divisions
- 601st Tank Destroyer Battalion

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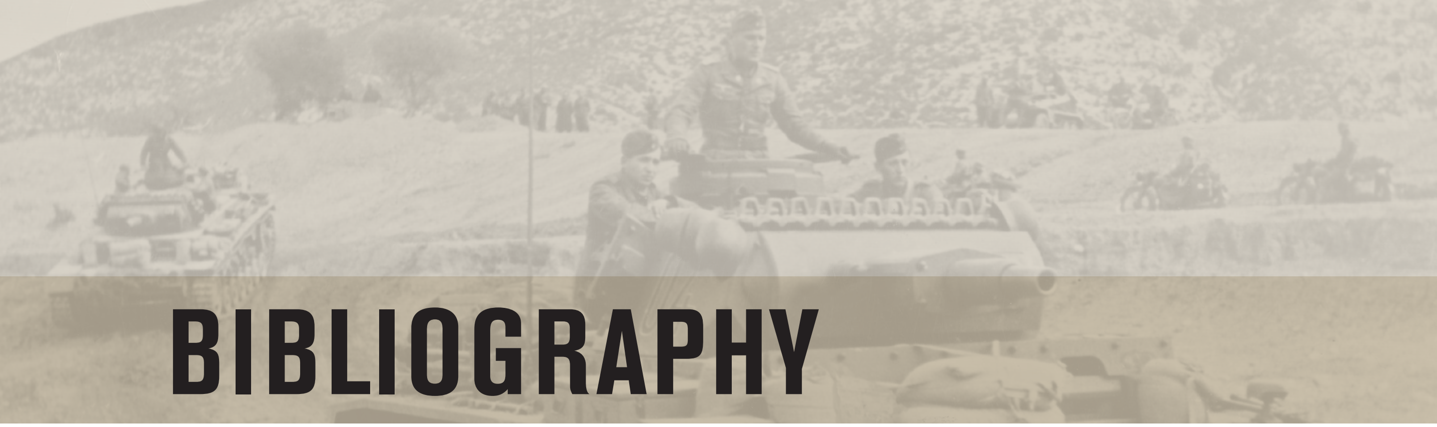
[1] Wounded on 6 May 1943. Replaced by Colonel Clarence C. Benson.



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INDEX

page references in **bold** refer to an illustration; *fig* to a figure

Abbassia 93, 128, 129
Acroma 40, 52, 53, 73, 74
Agedabia 10, 15, 16, 17, 19
Aircraft, British
  Beaufighter 85, 189
  Boston A20: 94, 172
  Hawker Mk11C 59
  Hawker Typhoon 182
  Hurricane II 273, **277**
  Hurricane IIC 59, 83
  Hurricane IID 76, 88, 105
  Kittyhawk 37, 273
  Wellington 143, 164
Aircraft, German
  Henschel Hs 129: 204, 207, 219
  Ju-87 Stuka 70, 200, 204, 219
  Schwerer Panzerspähwagen 204, **214**
Aircraft, US
  A-20 Havoc 221, **221**
Alam Halfa Ridge 114, 116, 118, 120–124, 133
Alam Nayil 99, 117, 120, 122
Alexander, Sir Harold 110, 124, 215, 250, 252, 261, 272, 279, 281, 282–283, 290, 292
Alexandria 29, 93, 116, 129, 131, 135
Alger, Lieutenant Colonel 230, 235–236
Algeria 141, 179, 184. 187, 301
Allen, Major General Terry 268–270
Allfrey, Major General Charles W. 206, 207, 218, 227, 244, 263, 283, 285, 288, 289, 292, 299
Ambrosio, Generale 279
Anderson, Lieutenant General Kenneth A.N. 190–191, 192, 193–195, 200, 206, 216, 218, 228, 235–237, 243–244, 246, 254, 279, 282–283, 289–290
Andrews, Sergeant Richard I. 259, 261
Antelat 12, 14, 17
anti-tank weaponry 33, 34,133, 305–306
  British **181**, **256,** 258
  German
    Pak38: **305**
    S-Minen 139
    Teller 139, 149, 287
Arcadia Conference, Washington 186
Archer-Shee, Major Robert A. 57
Arena, General Francesco A. 177
Arnim, Generaloberst Hans-Jürgen von 205, 213, 215, 218, 221, 222, 226–227, 228–229, 236, 238–239, 240, 243–244, 249, 251, 261, 263, 267, 268, 272, 284–285, 287, 290, 296–297, 299
Aslegh Ridge 59, 60, 67, 68
Atkinson, Rick 296
An Army at Dawn 222–223
Auchinleck, Field Marshall Sir Claude 12, 18, **20–21**, 22, 23, 25, 36, 38–39, 53, 56, 63, 65, 73–74, 79, 82, 83, 85, 86, 91–92, 93, 94, 100–102, 105, 107–108, 109–110, 111, 114, 127, 133, 135, 184, 304

Baade, Obserst Günther 283
Bab al Qattara 92, 98, 102
Baker, Lieutenant Colonel Hershel D. 237, 268–270
Baldassare, Generale 44, 45, 85
Baldini, Tenente Colonnello Renzo 177
Barlow, Major Rudolph 196, 198, 201
Barnett, Corelli 100
Barr, Niall 100
  Pendulum of War 152
Barré, Général de Division Georges 188–189, 190, 193
Bastico, Maresciallo Ettore 142, 180, 213
Bayerlein, Oberst Fritz 118, 122, 292
Béja 193, 194, 195, 244, 246, 248
Belhamed 36, 39, 70, 73, 75, 76
Ben Gardane 255, 256, 262
Benghazi 12, 18, 19, 140, 179, 183, 210
Benson, Colonel Clarence C. 274, 296, 298–299
Bir Bellefaa 72
Bir Beuid 50
Bir el Gubi 70, 74
Bir el Harmat 50, 53, 57, 59, 61, 68
Bir Hakeim 22, 37, 39, 40, 44–46, 50, 57–58, 64, 66, **67***map*, 69–70, 92
Birley, Lieutenant Colonel Normand A. 50, 69
Bismarck, Generalmajor Georg von 33, 53, 72, 73, 75, 86–87, 118, **118**
Bitossi, Generale Gervasio 84, 89, 147
Bizerte 189, 192, 193, 198–200, 213, 218, 284, 292, 296–297
'Black Code' 40, 79, 90
Blomberg, Major Henning von 189, 194
'Blue Line' 78, 144
Blumenson, Martin 250
Borowietz, Generalmajor Willibald 258, 282, 290
Bosvile, Brigadier 117, 158
Bottigliere, Tenente Colonnello Tommaso 211
Bou Arada 217, 218, 219, 249, 284
Bou Chebko Pass 240

Bou Ficha 299
Bradley, General Omar 283–284, 290, 295
Briggs, Brigadier 52, 58, 176
Briggs, Colonel Raymond 14, 15, 16–18, 57, **156**
Briggs, Major General Harold R. 66, 125, 169, 172–174
Britain
Desert Air Force 36–37, 70, 88, 94, 98, 101, 122, 156, 182, 263, 264, 272–273, 303
  Middle East Command 38, 110, 132, 307
  Royal Air Force 68, 73, 76, 80, 83, 85, 117–118, 121, 122, 143, 149, 159, 164, 172
British Army 304–305
  V Corps 206, 218, 227, 228, 244, 263, 283, 285, 288, 289, 292, 200
  IX Corps 279, 281, 288, 292
  X Corps 82, 83, 87, 88–89, 137–138, 142, 144–145, 149, 152–153, 154, 156, 158, 163, 174, 278, 284
  XIII Corps 12, 18–19, 23, 30, 52, 149–150, 156
  XXX Corps 23, 37, 44, 50, 53, 58, 63, 68, 71–72, 76, 83, 92, 93, 95, 98, 101–102, 136–138, 142–145, 149–150, 152, 156, 157–158, 210, 213, 255, 261, 262–264, 276–277
  1st Armoured Brigade 27, 66
  2nd Armoured Brigade 14, 15, 16–17, 19, 22, 52, 57, 58, 60, 71, 104, 107, 148, 154, 158, 161, 165, 169, 176, 273–274
  4th Armoured Brigade 27, 45, 46, 57, 58, 64–65, 69, 71, 74, 75–76, 83, 84, 86, 93, 96, 98, 117
  8th Armoured Brigade 145–146, 153, 172, 178, 261, 262, 265, 272–273, 279
  9th Armoured Brigade 136, 145, 147, 163, 164–5, 168, 180
  22nd Armoured Brigade 14, 50–52, 58, 60, 66–67, 71, 84, 86–87, 93, 96, 99, 104, 118, 120, 150, 154, 176, 178, 255
  23rd Armoured Brigade 105, 106–107, 111, 119, 122, 133, 144, 153, 156, 279
  24th Armoured Brigade 149, 158, 161
  26th Armoured Brigade 217, 219, 243, 286, 279, 292, 297
  1st Armoured Division 13–14, 14*fig*, 16, 18–19, 23, 27, 39, 50, 53, 57, 60, 70, 72, 84, 86–87, 89, 93, 108, 114, 144, 161, 163, 173, 174, 224, 267, 272, 277, 284, 287, 288, 292
  6th Armoured Division 217, 218, 240, 286, 293, 298, 299
  7th Armoured Division 23, 27, 39, 44, 45, 49, 50, 53, 66, 68, 70, 76, 79, 83, 84, 93, 117, 118, 119, 121, 125, 133, 150, 175, 176, 177–178, 180, 210, 211–212, 213, 261, 282, 292–293
  8th Armoured Division 100, 102, 105, 126, 210
  1st Army 206, 216, 255, 279, 282–283, 289–290, 292–293
  10th Armoured Division 82, 100, 114, 119, 144, 163, 210
  8th Army 18, 22–24, 27, 37, 63, 66–67, 79, 81, 83, 85–87, 88, 89, 91, 101, 108, 124–127, 131–134, 152, 156, 162, 180, 210, 213, 225, 279, 283, 304–307
  1st Army Tank Brigade 29, 52, 56–57, 59, 134
  25th Army Tank Brigade 217, 248
  32nd Army Tank Brigade 56–57, 66, 68, 71, 73, 74
  9th Australian Division 100, 161
  1st Battalion East Surreys 198–199, 202
  2nd Battalion Hampshire Regiment 202, 205
  128th Brigade 246, 248
  150th Brigade 59–60, 64
151st Brigade 264
1st Derbyshire Yeomanry 191, 194
201st Guards Brigade 51, 70, 72–74, 78, 262, 292
51st Highland Infantry 114, 144, 147, 154, 212, 278
3rd Hussars 146, 165, 167–168
8th Hussars 46–49, 87–88, 121
10th Hussars 16, 17, 57, 114, 169, 176
11th Hussars 13, 15, 177, 213, 215, 282, 292, 293, 298
5th Indian Brigade 103–104, 175, 176
10th Indian Brigade 67–68
29th Indian Brigade 83–84, 88
4th Indian Division 14, 19, 267, 277–278, 292, 299
5th Indian Division 66, 68
3rd Indian Motor Brigade 45–46
11th Infantry Brigade 192, 195, 198, 203
36th Infantry Brigade 192, 194, 195, 200, 225
69th Infantry Brigade 107, 264
128th Infantry Brigade 246, 248, 280
133rd Infantry Brigade 161, 163–164
151st Infantry Brigade 162, 163
4th Infantry Division 114, 285, 289, 292
44th Infantry Division 114, 149–150
50th Infantry Division 85–86, 88, 163, 264
56th Infantry Division 284–285
78th Infantry Division 194–195, 196, 225, 288
17/21st Lancers 191, 192–193, 195, 200, 202–203, 241–242, 280–281, 286, 294
2nd Lothian and Border Horse 217, 219
7th Motor Brigade 49–50, 70, 74, 84, 117, 172, 173
9th Queen's Royal Lancers 17, 52, 57, 75, 99, 104, 128, 144, 148, 154, 169, 287–288
16/5 Queen's Royal Lancers 281, 297
1st Royal Dragoons 164, 179
12th Royal Lancers 13, 16, 125
1st Support Group 12, 15, 16, 17
County of London Yeomanry (CLY) 13, 72, 87, 119–120, 277, 278, 297
Derbyshire Yeomanry 191, 194
Dominion Divisions 100, 105, 110, 180
Gore Force 239–40
'Jock' Columns 15, 49, 66, 74, 84
Kingforce 130, 174
King's Dragoon Guards (KDG) 42, 74, 127
Long Range Desert Group (LRDG) 262, 263, 265
North Irish Horse (NIH) 248, 288
Nottinghamshire Yeomanry 146, 273
Queen's Bays 60, 72, 144–145, 148, 150, 154, 169
Royal Army Ordnance Corps (RAOC) 27, 28–29, 79, 93, 128, 131, 149, 156
Royal Artillery (RA) 132, 305
Royal Artillery Forward Observer (FO) 167
Royal Engineers (RE) 120, 133, 277, 305
Royal Gloucestershire Hussars (RGH) 50, 69, 308
Royal Horse Artillery (RHA) 120, 131, 132
Royal Scots Greys (RSG) 104, 120
Royal Tank Regiment (RTR) 46, 47, 49, 52, 64–65, 69, 73, 78, 79, 119, 144

  Royal Wiltshire Yeomanry (RWY) 135, 145–146, 150, 165, 167, 308
  Staffordshire Yeomanry 146, 154, 172, 273, 278
  Task Force Carr 296, 298
  Territorial Army (TA) 105, 126, 161, 216
  Warwickshire Yeomanry 165, 167, 168
Broich, Oberst Friedrich von 190, 196, 230, 242–243, 258, 260, 268, 270, 272, 274
Brooke, General Sir Alan 110, 217
Brooke, Lieutenant Colonel 56
Brooks, Lieutenant Colonel G.H. 285
Bruss, Lieutenant Colonel Hyman 195, 198, 199–200, 206, 237
Bülowius, Generalmajor Karl 239
Burk, Hauptmann Rolf 201, 246

Cairnes, Lieutenant Colonel John E. 107, 264–265
Campbell, Brigadier 'Jock' 23, 111
Cantaluppi, Generale di Divisione Gaetano 211
Cap Bon Peninsula 279, 299
Carr, Brigadier William G. 66, 67–68, 84, 93, 96, 117, 125–126
Carr, Lieutenant Colonel Frank F. 298
Carver, Lieutenant Colonel Michael 293–294, 298
Casamassima, Colonnello Rocco 147, 155
Cass, Brigadier Edward E. 203
Cauldron, The (*Hexenkessel*) 59, 61, 62, 63, 65, 66, **71**
Cavallero, Mareschiallo Ugo 109, 11
Chaffee, Adna 186
Charruba 19
Chouïgoui Pass 196–197, 201–202
Churchill, Winston 18, 22, 36, 70, 74, 81–82, 83, 100, 110, 111, 124, 128
Clifton, Brigadier George H. 122
Coady, First Lieutenant Gerald G. 270
Close, Second Lieutenant Bill 47, 145, 178, 263, 273
Compton, Lieutenant Colonel James 99–100
Cramer, General der Panzertruppe Hans 254, 258, 260, 278, 279, 297, 299
Crangles, Sergeant Joseph F. 259, 261
Crasemann, Oberst Eduard 86
Crisp, Major Bob 145
Crocker, Lieutenant General John T. 279–283, 286–288, 292
Crosby, Lieutenant Colonel Ben G. 236, 299
Crüwell, General Ludwig 18, 33, 40, 41, 59
Currie, Brigadier John 107, 145–146, 150, 163, 164, 167, 169
Cushman, Major Allerton 226
Custance, Brigadier Edward C.N. 119, 145–146, 153, 172, 178

Daubin, Second Lieutenant Freeland A. 197
Davis, Lieutenant Charles L. 200
Dawes, Major Alan 168
Dawney, Lieutenant Colonel David 248, 288
Deichmann, Oberleutenant Eberhard 202–203
Deir el Abyad 94
Deir el Shein 92–97, 101
desert environment 98, 304
Devers, Major General Jacob L. 186
Dickson, Colonel Benjamin 229
Djebel Abiud 192, 193–194
Dejebel Bou Aoukaz 207, 292
Djebel Bou Kournine 286–287
Djebel Djaffa 285
Djebel El Ahmera 288
Djebel El Guessa 205, 206
Dejbel el Rhar 288
Djebel Hamra Pass 240–241
Djebel Haouaeb 280, 281
Djebel Lessouda 232–234
Djebel Maïana 204
Djebel Rhorab 280, 281
Djebel Roumana 278
Djedeida 195, 196, 198–199, 200, 201, 202
Dorman-Smith, Eric 38, 110, 127
Dorsal mountain range 192, 218, 225, 236
Doyle, Major Paddy 150
Draffen, Lieutenant Colonel George W. 60
Drew, Lieutenant Colonel Dinham 24
Dunbar, Lieutenant Colonel Howard C.F.V. 106, 107
Dunphie, Brigadier Charles A.L. 216, 239, 240–242, 255

Eadie, Lieutenant Colonel James A. 273
Ed Duda 66, 75
Egypt 73, 79–80, 83, 124, 142, 300
Eisenhower, Dwight D. 190, 206, 208–209, 215–216, 217–218, 228–229, 252, 282, 283
El Adem 40, 42, 48, 52–53, 57, 70, 75
El Agheila 10, 15, 179, 210, 211–212, 302
El Alamein 88–89, 90, 182
  1st battle 91–108
  2nd battle 109–142
El Aouina airfield 189, 297
El Aroussa 244, 249–250
El Bathan bridge 196, 202
El Daba 89, 173, 174, 178
El Glib 220
El Guettar 218, 263, 268–270, 278
El Hamma 116, 272–273, 274
El Haseiat 10, 15
El Kharita Plain 117
Eluet et Tamar 56, 64
Enfidaville 278, 282, 283, 294, 292
Enigma code 11, 38, 65, 91, 127, 174
Erskine, George 255, 292–294, 297
Evelegh, Major General Vyvyan 195, 200, 203, 206
Eveleigh, Major Michael 168
Ewins, Lieutenant Colonel 24

Faïd Pass 222–225, 227, 229, 230
Falaise 183–184
Fellers, Colonel Bonner 40, 79
Feriana 238

Ferryville 296
Filose, Brigadier Anthony 41, **45**
Finigan, Lieutenant Colonel James L. 285
Fischer, Generalleutnant Wolfgang 200–201, 202–203, 204–207, 208, 209, 215, 226
Fisher, Brigadier Arthur F. 84, 93, 96, 98, 126, 144–145, 148, 154, 158, 161, 165, 169, 172, 176, 273–274, 287, 288
Fondouk Pass 228, 279–282, 286
Foote, Lieutenant Colonel Henry R.B. 73
Forster, Captain B.C. 119
France
  XIX Corps 215, 216, 218, 225, 228, 235, 240, 292, 295, 299
  Free French Army 37, 40, 92, 129, 262
  Vichy French Force 141–142, 187, 188, 189, 201
Fredendall, Major General Lloyd R. 188, 192, 216, 217–218, 221–222, 224, 229, 235, 236, 240–241, 251, 252, 309
Ffrench-Blake, Lieutenant Colonel Desmond O'Brien 219, 288
French-Blake Major Robert L.V. 242
Freyberg, Major General Bernard 82, 84, 86–87, 120–122, 136, 145, 147, 150–151, 153, 154, 163, 172, 177–178, 211–212, 262, 265–267, 272
Frömbgen, Hermann 260
Fuka 86, 87, 88–89, 94, 173, 177, 178
Fullreide, Oberstleutnant Fritz 280–282

Gabès 217, 225, 253, 263, 268, 272, 274, **275**
Gafsa 217, 218, 221, 227, 233, 268, 243, 253, 263, 268, 270
Gairdner, Charles H. 126
Gambut 58, 76
Gardiner, Major Henry 204, 221, 229, 236–238, 241, 295
Garet Hadid 234
Gatehouse, Major General Alexander 23, 25, 82, 100, 106, 107, 119, 126, 138, 153–154, **160**, 163, 210
Gause, Generalmajor 61, 123
Gazala 19, 24, 27, 38, 40–63, 73, 79, 91, 93, 100, 101, 133, 304
Gerhardt, Oberst Rudolf 232, 269–270, 287
German Air Force (Luftwaffe) 40, 73, 80, 94, 98, 120, 121, 141, 148, 156, 159–160, 190, 234, 279, 284, 290
Hermann Göring Division 283–284, 285
German Army 303
  LXXXX Armeekorps 205
  6.Armee 180, 302
  5.Panzerarmee 205, 244, 268, 283
  10.Panzer-Division 200–201, 226, 230, 258, 260–261, 263, 268–270, 272, 299
  15.Panzer-Division 15, 17, 53, 57, 60, 67, 68, 69, 70–71, 74, 78, 86, 102, 106, 121, 140, 147, 155*fig*, 155–156, 180, 211, 213, 278, 282, 299
  21.Panzer-Division 48, 53, 56–57, 60, 64, 68–69, 71, 72, 73, 75, 78, 85–89, 95, 102, 140, 150, 156, 159–160, 172, 180, 183, 211–212, 213, 222, 223, 225, 260, 266, 274, 278, 299
  90.leichte Afrika Division 10, 32, 40, 42, 49, 52, 57–58, 60, 64, 70, 75, 84, 85–86, 89, 94, 96–97, 117, 140, 157, 159, 176, 213, 262, 274, 276, 282, 299
  164.leichte Afrika Division 114, 139, 147, 148, 183, 242, 276, 282
  334.Infanterie-Division 219, 283, 289
  Africa Korps 19, 62, 65, 98, 116, 121–122, 176, 180, 182, 184, 258, 299
  Division Manteuffel 283, 290, 292
  Divisionskommando V Afrika (DAK) 10–11, 14, 15, 30–31, 40, 42, 53, 62, 78, 80, 87, 88, 97, 99, 105, 107, 115–116, 119, 140, 174–175, 180, 184, 215, 254, 297, 302, 307
  Fallschirmjäger Brigade Ramcke 114, 122
  Gruppe Audorff 285
  Gruppe Crüwel 41–42, 59
  Gruppe Marcks 15, 16, 17, 19
  Gruppe Rommel 44
  Gruppe Schirmer 285
  Gruppe Siemens 156
  Gruppe Stiefelmeyer 156
  Gruppe Ziegler 238, 250
  Heeresgruppe Afrika 243, 261, 290, 296–297, 299, 301
  Kampfgruppe Baade 69, 70, 103
  Kampfgruppe Briehl 88–89
  Kampfgruppe Cramer 18, 19
  Kampfgruppe DAK 240
  Kampfgruppe Fullreide 280–281
  Kampfgruppe Gerhardt 232–233, 236–237, 260
  Kampfgruppe Hudel 199, 201, 202, 204, 206
  Kampfgruppe Koch 201, 202, 219
  Kampfgruppe Lang 244*fig*, 246–249, 268, 272
  Kampfgruppe Lüder 201, 202, 204, 221
  Kampfgruppe Menton 94
  Kampfgruppe Mildebrath 17
  Kampfgruppe Mitte 147, 154, 158
  Kampfgruppe Pfeiffer 161–162, 172, 224, 237
  Kampfgruppe Reimann 232–233
  Kampfgruppe Schmid 249, 250, 283, 285
  Kampfgruppe Schütte 234
  Kampfgruppe Stempel 224
  Kampfgruppe Stenkhoff 234, 237–238
  Kampfgruppe Weber 218–220, 225–226
  Kampfgruppe Witzig 193–194
  Korsgruppe Weber 244–245, 246
  Kradschützen-Bataillon 10: 195, 297
  Panzer-Abteilung 30, 75, 78, 184
  Panzer-Abteilung 190: 189–190, 196–197, 199
  Panzer-Aufklärungs-Abteilung 33: 104
  Panzerarmee Afrika 15, 30, 33, 36, **39**, 41, 42, 65, 70, 77, 79, 80, 83, 85, 87, 89–90, 94, 101, 107–108, 115, 140–141, 157, 162, 180, 184, 210
  Panzergrenadier Battalion 106, **238**
  Panzergrenadier Regimenter 115, 119, 204
  Panzer-Werkstatte Kompanie 98, 299
  Pionier 60, 61, 77, **77,** 95
  Sicherungsgruppe Djedeida 201, 204
Germany
  Oberkommando des Heerees (OKH) 15, 19, 40, 77, 80, 115, 141–142, 180, 199, 299–301, 303

  Oberkommando der Wehrmacht (OKW) 79, 199, 201
Gibb, Lieutenant Colonel Alistair 167, 168
Gibbs, Major Tim 167–168
Godwin, Major Charles 53, 59
Godwin-Austen, Lieutenant General Alfred 12, 14, 18, 19
Göring, Hermann 283
Gott, Lieutenant General William 19, 23, **46**, 63, 66, 73, 83, 84, 86–87, 91, 93, 103, 106–108, 110–111, 304, 309
Green, Major Freddy 60
Grün, Major Werner 259
Guingand, Brigadier Francis 'Freddie' 38, 127, 162
gunnery 25–28
  British 28, 30, 48, 133
    'Bishop' 132
  German 30–32, 208
    Howitzers **37**
    Marder II **277**
    Marder III 32, **115**, 123, 140, 148, 156
    sFH 13/1: **116**
  Italian
    Semovente 11, **32**, 33, 117, 132, 140, 147, 155, 160, **193**, 195, **222**, 304
  US 108, 209
    M7 Priest 127, 132, **132**, 172
Günsch, Oberst 201
Gwin, Captain Robert D. 290

Hallouf Pass 258, 260
Hamilton, Lieutenant Stuart 18, 56, 76, 82
Hamilton-Russell, Lieutenant Colonel Richard G. 191, 200, 202, 281
Hammack, Lieutenant Colonel Louis A. 280, 282, 296
Hanes, Lieutenant Bud 196
Harbord, Major James D. 47
Harding, Major General John 109, 125–126, 150, 156, 162, 175–177, 210, 255
Harlinghausen, Oberst Martin 189
Harmon, Major General Ernest N. 188, 252, 272, 290, 295–296, 299
Hart, Basil Liddell 300
Harvey, Brigadier Charles 211, 258, 266, 272–273
Hatcher, Captain William H. 207
Haydon, Brigadier Cecil 59, 61
Hightower, Lieutenant Colonel Louis V. 222, 230, 233–234
Hildebrandt, Oberst Hans Georg 222, 234, 240
Hill, Lieutenant Colonel James 193
Hinde, Brigadier William R.N. 255, 297, 298
Hitler, Adolf 36, 80, 140, 142, 152–153, 177, 180, 189, 215, 261, 279, 299, 302
Hollands, Captain Darry 250
Holliman, Major Gus 293
Holmes, Lieutenant General William G. 82, 83, 85, 87, 125
Horrocks, Lieutenant General Brian 111, 118, 119, 121, 123, 125, 137, 149, 162, 210, 267, 272–273, 274, 276, 277–278, 283, 284–285, 292, 293, 298
Hößlin, Hauptmann Roland-Heinrich 103–104
Hudel, Hauptmann Helmut 199, 201, 232–234, 242–243, 260
Hull, Lieutenant Colonel Richard 191, 194, 195
Hülsen, Generalmajor Heinrich-Hermann von 266, 272, 274
Hunt's Gap 246, 247–248, **248**, 272, 309

Imperiali, Generale Giovanni 189, 267, 268
Irkens, Oberst Josef 259, 265, 289, 293–294
Italian Army
  III Btfl.Carri L 89
  IX Btgl.Carri M 45, 159
  X Brgl.Carri M 45, 46, 57
  XIII Btgl.Carri M 115, 177
  XV Btgl.Carri M 211, 218
  XVII Btgl.Carri M 239, 263
  XX Corpo d'Armata 33, 40, 42, 44–45, 57, 78, 80, 83, 85–86, 99, 115, 120, 122, 140, 174, 184, 211, 253
  XXI Corps 65, 101, 102, 139–140, 253
  L.Brigata Speciale 159, 218, 222, 267
  1° Armata 253–254, 272–273, 276, 278, 282–283, 284, 297, 299
  133° Divisione Corazzata 'Centauro' 179, 189, 211, 215, 224, 263, 267, 274
  136° Divisione Corazzatda 'Giovani Fascisti' 142, 215, 285
  133° Divisione Corazzata 'Littorio' 11, 83–84, 86, 90, 102, 118, 120, 140, 147, 155–156, 159–160, 180
  16° Divisione Motorizzata 'Pistoia' 142
  102° Divisione Motorizzata 'Trento' 87, 89, 94, 139, 147
  8° Reggimento Bersaglieri 99
  10° Reggimento Bersaglieri 189
  132° Reggimento Carri 45, 46, 99
  'Ariete' Division 11, 19, 33, 39, 42, 44–46, 53, 57–60, 67, 68, 78, 84, 86, 90, 99, 115, 120, 140, 156, 159, 162, 173, 176–177, 180
  Brescia Division 58, 87
  Corpo d'Armata di Manovra (CAM) 11, 13*fig*, 15, 33, 304
  'Folgore' Division 114, 149, 156
  Raggruppamento Sahariano Mannerini 254, 263
  Superga Infantry Division 189, 218
  'Trieste' Division 33, 44, 57, 58, 60, 78
  Italo-Germany Army (ACIT) 138, 174, 222, 226, 241, 243
Italy 211, 299, 304
  Comando Supremo 11, 15, 19, 77, 80, 83, 115–116, 121, 141, 179, 180, 199, 213, 215, 227–228, 236, 238–239, 243–244, 253, 261, 278
  Regio Aeronautica 194, 279, 290, 303
  Regio Esercito 84, 155, 254, 303, 304
  Servizio Informazioni Militari (SIM) 40
  Superasi 19, 80, 83
Ivor-Moore, Brigadier Thomas 283

Jackson, Lieutenant Colonel Guy 167
Jarrett, Major George B. 26–27
Jolly, Major Cyril 47
Kairouan 281–282

Karachoum Pass 218
Kasserine Pass 238–43, 250–251, 252, 253, 305
Kaye, Captain Douglas R.B. 16–17
Keightley, Major General Charles 216–217, 240, **254**, 286–287, 293, 297
Kellett, Lieutenant Colonel Edward 266
Kenchington, Brigadier Arthur G. 126, 149, 153, 154, 158, 160
Kern, Lieutenant Colonel William 205–206, 222
Kern's Crossroads 234–236
Kesselering, Generalfeldmarschall Albert 36, 80, 114, 116, 177, 180, 188–189, 190, 200, 205, 213, 227, 238, 243, 272, 278
Khairoun 263, 268
Kidney Ridge 144, 147–148, 150, 154, 158, 159, 161
Kilkelly, Lieutenant Colonel Gerald P. 47, 87–88
King, Major Norris 130, 159, 173–174
Kirkman, Brigadier Sydney C. 132–133
Kisch, Brigadier Frederick H. 133–134
Kleeman, Generalmajor Ulrich 42, 49–50, 52–53, 57–58, 60, 64, 75, 84, 85, 86–87, 94, 96
Klopper, Major General Hendrik 74, 78, 79
Knightsbridge box 51, 52, 58, 61, 70–74
Knoche, Hauptmann Wilhelm 194
Koch, Oberleutenant Walter 201
Koëltz, General Marie-Louis 216, 295, 299
Koenig Général 64, 69, 70
Kozacki, Jozef 134
Kümmel, Hauptmann Johannes 47, 78, 95–96, 106, 107, 121

Lambert, Colonel Kent C. 296
Lang, Oberst Rudolf 246–249, 309
Langlade, Colonel Paul de 295
Lasagna, Tenente Colonnello 211
Le Coultreux, Guy-Louis Ernest 295
Leclerc, General Philippe 262
Lee, Brigadier Alec W. 161
Lee, Lieutenant Colonel James M. 202, 205
Leese, Lieutenant General Oliver 125, 136, 142, 151, 153, 154, 157, 158, 172, 210, 213, 254
Liardet, Lieutenant Colonel Henry M. 100, 262, 264, 267, 276
Libya 210–213
Liebenstein, Generalmajor Kurt von 272, 274, 276
Lindsay, Lieutenant Colonel Michael J. 263, 265, 295
Lodge, Major Henry Cabot Jr 71, 72
Longstop Hill 215, 284, 288–289, 309
Luck, Major Hans von 36, 49, 52, 263
Lüder, Major Hans-Georg 199, 201, 215, 219, 246, 249, 268
Lumsden, Major General Herbert 14, 23, 39, 44, 50–53, 57, 58–59, 63, 71, 72, 82, 84, 86–87, 89–91, 93, 96, 101, 103–104, 114, 125, 137–138, 144–145, 149, 151–153, 154, 156, **156**, 163, 169, 174–175, **175**, 176–177, 179, 210, 304
Lytle, Captain J.H. 246

MacDonell, Colonel John R. 17, 52, 75–76, 99
Mainwaring, Lieutenant Colonel Hugh 127
Maknassy Pass 217–218, 221–222, 224–225, 253, 267–268, 272, 275
Malta 80, 189
Mannerini, Generale Alberto 254, 265
Manteuffel, Oberst Hasso von 283, 290, 292
Maraist, Colonel Robert von 224, 230
Mareth Line 215, 217, 226, 228, **231***map*, 236, 239, 243, 253–256, 261–267, 272, 274, 275
Marriott, Brigadier 12, 16
Marshall, General George G. 81, 223
Massicault-Tunis Axis 290–292
Mateur 193, 195, 200, 284, 290, 296
Matmata Hills 253–254, 262, 267
May, Lieutenant Colonel Kenneth F. 95, 96
Mayshark, Captain James P. 203, 204
McCreery, Major General Richard 109–110, 125
McGinness, Lieutenant Colonel John R. 207–208
McQuillin, Brigadier General Raymond E. 221, 222–224, 226–227, 230, 233, 234–235, 243, 267
Meade, Captain G.W. 239, 240
Medenine 255–256, 258, 261, 276, 305
Medicus, Major Franz 267
Medjerda River 194, 196, 198, 202, 205, 207, 288, 289
Medjez el Bab 190, 194, 195, 198, 206–208, 244, 250, 284, 285, 289
Mellenthin, General Friedrich von 15, 27, 44, 59, 68, 78, 88, 94, 98, 123
Mersa Brega 12, 180, 210, 211–212
Mersah Matruh 79, 82–83, 91, 93, 100, 115, 133, 178
Messe, Generale Giovanni 215, 226, 243, 253, 254, 256, 258, 262, 263, 264, 266–267, 272, 274–275, 278, 282, 283, 284, 297, 299
Messervy, Major General Frank 14, 15, 16, 23, 39, 44, 45–46, 49, 50, 57, 63, 65–66, 68, 71, 74, 75, 76, 91, 309
Mildebrath, Oberst Werner 17, 121
minefields and mine-clearing 37–38, 60, 117–118, 122, 133–134, 138–139, 145, 149, **139**, 150, 162, 164, 213, 248, 287, 305
Minqar Qaim 84, 85, 866
Misa, Brigadier Lawrence 105, 106, 107
Miteirya Ridge 94, 105, 107, 136, 139, 144–147, 150–151, 154, 155, 156, 158, 163, 167
Mockler-Ferryman, Brigadier Eric E. 228
Montgomery, Field Marshal Bernard 38, 110, 111, **113–114**, 114, 116–117, 118–119, 121, 123, 136–139, 151–152, 154, 161–163, 173, 174–175, 177–178, 182–184, 210, 211–213, 215, 217, 228, 254–255, 258, 261–262, 263, 267, 272, 275, 276, 278, 283, 284, 300, 304
Morocco 141, 179, 184, 187, 188, 208, 301
Msus 17, 18, 19
Müller, Oberst Gerhard 33, 36, 90, 119, 160
Mussolini, Benito 36, 279, 299

Naqb Abu Dweiss 91, 93
Nehring, Generalleutnant Walter 33, 41, 53, 70, 94, 97–98, 99–101, 104–105, 108, 115, 118, 123, 193, 198–200, 201, 205
New Zealand 87
  22nd Battalion 103
  4th NZ Brigade 99, 103–104

  5th NZ Brigade 146, 256
  6th NZ Brigade 92, 105–106, 122
  2nd NZ Division 82, 83, 84, 120, 136, 145, 211–212, 262
Newnham, Lieutenant Colonel Horace C.E. 246, 248
Nix, Major Charles 202, 276, 280–281
Norrie, Lieutenant General Charles Willoughby 23, 37, 39, 44, 45–46, **46**, 50, 53, 56, 58, 59, 63, 64, 65–66, 71, 75, 76, 91, 92, 96, 98, 101–102, 304
North Africa campaign 8, 37, 300–309
  Anglo-American landings 114, 124, 201
  Leadership 309
  losses 308
  theatre of operations **43***map*

O'Carroll, Brigadier Walter 59, 61
O'Connor, General Sir Richard 125, 184, 309
Objective PLUM 263, 265
Oliver, Brigadier General Lunsford E. 186, 188, 192, 198, 200, 203, 206, 207–208
Operation *Aberdeen* 66–70, **143***map*
Operation *Acrobat* 12, 22
Operation *Bacon* 103, 104
Operation *Barbarossa* 36
Operation *Beresford* 121–122, 123
Operation *Bertram* 136
Operation *Capri* 256, 258–261, **291***map*, 302
Operation *Compass* 110, 308
Operation *Crusader* 17, 22, 23, 39, 41, 77, 100–101, 133, 305
Operation *Flax* 279, 290
Operation *Goodwood* 138, 152
Operation *Lightfoot* 135, 136–138, 141–161, **166***map*, 182, 183
Operation *Manhood* 107, 109
Operation *Market Garden* 152
Operation *Oration* 284
Operation *Pugilist* 264
Operation *Satin* 217, 221, 228
Operation *Scipio* 276
Operation *Scorpion* 276–277
Operation *Splendour* 105–107, 110
Operation *Strike* **271**map
Operation *Supercharge* 165*fig*, **257***map*, 136, 162–184
Operation *Supercharge II* 267, 272–276
Operation *Torch* 124, 126, 130, 141–142, 186, 187, 190, 195
Operation *Uranus* 302
Operation *Vulcan* 284, 285, 286–292
Oran 188, 192, 216, 217
Orne River 138
'Oxalic' line 136–137, 144, 145–146, 151, 153
Palestine 82, 135
Parsons, Major Norman 230, 232
Patton, Major General George S. Jr 81, 141–142, 183, 185–186, 188, 190–191, 195, 208, 252–253, 263, **265**, 267–268, 270, 272, 274–275, 279, 283, 309
Pepys, Lieutenant Colonel Anthony H. 164, 179
Pierson Line 137, 154
Pommée, Hauptmann Paul 242, 260
Ponsonby, Major George T. 242, 281
Pont du Fahs 290, 292, 295
Preve, Capitano Constanzo 147, 168, 172
Protville 297, 299
Pyman, Lieutenant Colonel Harold E. 121, 273

Qattara Depression 91, 116, 117, 123, 136

Rahman Track 163, 165, 167, 169, 173–174, 176
Ramsden, Major General 74, 97, 100, 102–103, 125
Renton, Major General James 49, 76, 93, 117, 118, 119, 121, 125, 250
Rhodesia
289th Anti-Tank Battery 49–50
Richards, Brigadier 46, 57, 58
Richardson, Lieutenant Colonel Charles 127, 136
Ritchie, General Sir Neil 18, 19, 22, 23, 36–40, 41, **46**, 50, 53, 56, 58, 60, 63, 65, 69–70, 73–74, 76, 79, 82–83, 84–85, 91
Robaa 220, 225–226
'Robcol' 97–99, 100
Roberts, Brigadier George 118, 119, 121, 123, 127, 150, 176–177
Roberts, George, 'Pip' 24–25, 69, **254**, 255, 279–281, 286, 292, 297
Robinett, Colonel 203, 204, 207, 208–209, 220–221, 228, 235, 236, 240–241, 290, 295–296, 300
Rommel, General 15, 17, 19, 32, 36, 40, 41, 44, 53, 57–66, 69–73, 75, 77, 79–80, 83, 85, 86–91, 93–94, 96–97, 99, 101–102, 114–119, 121, 123, 124, 131, 142, 152–153, 156–157, 159–162, 172–173, 178–180, 210–212, 213, 215, 223, 226, 236, 238–241, 250, 253, 255–261, 276, 299, 300, 301–302, 303, 309
Roosevelt, Franklin D. 81
Ruweisat Ridge 89, 92–93, 94, 95–98, 99, 101–104, 106, 130, 132–133, 305

Saunnu 16–18
Sbeitla 218, 220, 222, 230, 233–234, 235–238, 243, 250–251
Sbiba 237, 240, 244
Schmid, General Joseph 'Beppo' 283, 285, 292
Seatrain Texas (US) 81–82
Sened Station 221–222, 224, 267
Sfax 189, 217–218, 225, 253, 263, 282
Sidi Abd el Rahman 84, 164, 167, 175, 176
Sidi Bou Zid 226–227, **229**, 229–230, 233–234, 236, 243, **245***map*, 250–251
Sidi Hamza 84, 85
Sidi Muftah 59, 67
Sidi Nisr 195, 246–247, 249, 272
Sidi Rezegh 23, 75, 76, 209
Sidi Salem 234, 235
Siemens, Hauptmann 147–148, 150, 151, 158, 172
Singer, Captain Grant 176, 178
'Snipe' position 158–161, 184
Souk Ahras 192, 193
South Africa 56, 79

  32nd Army Tank Brigade 56–57
  3rd Reconnaissance Battalion 42
  3rd South Africa Brigade 89
  1st South Africa Division 57, 74, 92, 94
  2nd South Africa Division 74
  6th South Africa Brigade 78
  3rd South Africa Infantry Brigade 92, 96
  Armoured Car Regiment 42, **42**
Sponeck, General Hans Emil Otto 176, 282, 299
Stalin, Joseph 307
Stalingrad 180, 299, 302
Stark, Colonel 230, 235, 239–240, 267
Stefanis, Generale de 45, 57, 85, 99
Stiefelmayer, Hauptmann Otto 147, 158–159, 161, **173**, 180
Stotten, Hauptmann Hans-Günther 239–240, 259
Stumme, General der Panzertruppe Georg 123, 147–148
Suez Canal 29, 102, 105, 114, 302
Syria 82, 300

Tadjera Hills 255, 258
tank battalions 301*fig*
tank transporters, British
  Scammell Pioneer **131**
tank transporters, US
  Diamond T (M19) 131
tank warfare 182, 300, 303, 306, 309
tanks, British 165*fig*, 306
  AEC Mk1: **124**
  Bishop **137**
  Churchill **141**, 159, 174, 250
  Churchill Mk III **130**, 130–131, **174**, 306
  Cromwell 129
  Crusader **18**, **29**, 52, 63, **92**, **97**, **181**
  Crusader II 28, 129, 306
  Crusader III 129, **146**, 195, 306, **307**
  Humber **29**, 204
  Humber MkII **81**
  Matilda 28, 53, 73, 95, 107, 130, 306
  Matilda Scorpion 134, **135**, 164
  Scorpion 144, 149
  Valentine 25, 52–53, 56, **60**, **69**, 78, **90,** 106–107, 130, 156, **186**, 200, 264, 306
  Valentine Mk III 28, **61**
  Valentine Mk IX **211**
tanks, French
  Somua S-035: 295, 299
tanks, German 302*fig*, 209
  Maybach HL 210: 199
  Pz III 48–49, 51, **73, 75**, **80**, 96, **108**, **128**, **179**, 301
  Pz111 Ausf.J **11**, **16**, 30, **30**, **37**, 62, **65**
  PzIII Ausf.N **227**
  Pz IV 16, **84**, **269**, 301
  Pz IV Ausf.E 199, 209–210
  Pz IV Ausf.F **126**
  Pz IV Ausf.G 119–120, 123, 127, 147, 153, 156, **183**, **241**, **298**
  Pz VI Tiger Ausf.E 209
  Schwerer Panzerspähwagen 204
  Tiger **198**, 199, 202–203, 209–210, 236, 308
  Tiger 131: **287**
  Tiger 132: 220
  Tiger 142: **248**
  Tiger 241: **220**
tanks, Italian **170–171**, 308
  AB41: **34–35**
  AS.42: **218**
  M14/41: 11, **12**, 89, 155–156, 159, 173, **174**, 177, 184, 304
  SPA-Viberti AS.42: **253**, 254
  Carro Commando **31**
tanks, Soviet
  KV-1: 48
  T-34: 34
tanks, US 208
  M3: **13,** 25, **25,** 186, **187**, 192, **203**, **212**, **219**, 229, 236
  M3 'Barbarian' **216**
  M3A1: 127, 209
  M3 Lee 209
  M4: **15, 229**, **233**
  M4A1 'Honky Tonk' 224, **225**, 127–128
  M4A1 Sherman 127–129, **151**
  M4A2**:** 127
  M5**:** **296**
  Grant **20–21, 24**, 25, **26**, 27–28, **42**, 47–49, **47, 49**, 50–51, **51**, 52, **54–55**, 62, **72**, **74**, **82, 95, 102**, 119–120**, 214**, 304
  Renault R35: 188
  Sherman 128–129, **148**, 153, **154**, **169**, 182, **278**
  Stuart 16, **24, 26**, 27, 47, **48,** 64, **65**, **68**, 129**, 294**
  Texas 233
Tarhouna 213
Taylor, Major Thomas I. 101
Tebaga Gap 254, 262, 263–267, 272–273, 274
Tébessa 217, 238, 240, 250
Tébourba 195, 196–205, 209
Teege, Oberleutnant Willi 33–34, 47–48, 52, 59, 90, 172, 180
Tell el Aqqaqir 164, 165, 167, 169, 172, 173, 175
Tell el Eisa 94, 101, 102, 139, 161
Tel el Mampsra 176
Thala 239–240, 242, 250
Thelepte airfield 236, 238
Thoma, Generalleutenant Wilhelm Ritter von 123, 153, 155, 156, 157, 161–162, 172, 173–177, 180
Thwaites, Lieutenant Henry O.D. 150
'time-on-target' technique 133, 142
Tincher, Lieutenant Colonel Maxwell A. 270
Tobruk 26, 36, 38, 63–91, 140, 173, 179, 183
Todd, Colonel John H. 203, 204, 206, 207, 215–216
Toujane-Medenine Road 258
Toulon 201
Trighe el Abd 74
Tripoli 8, 10, 30, 114, 140, 179, 211, 213, 254–255
Tuck, Captain William 188, 196–197

Tunis 189, 192, 198, 200–206, 213, 218
Tunisia 8–9, 188, 189–226, 250, 284, 286
Turner, Lieutenant Colonel Victor 158, 159, 160
'Twelve Bore' codeword 118

ULTRA intercepts 111, 116–117, 127, 136, 162, 174, 183, 199, 228, 229, 256, 263, 284, 290
Uniacke, Lieutenant Colonel Robbie D.W. 24, 48, **64**, 64–65
United States
  Allied Forces HQ (AFH) 228
  War Department 187
United States Army 72, 185, 209
  II Corps 188, 216, 221–222, 225, 228–229, 239, 250–251, 253, 263, 283, 290, 292, 295, 300
  1st Armored Division 71, 142, 186, 217, 221, 224, 226, 229, 243, 251, 267–268, 272, 275
  1st Army 190–191, 206, 210, 216, 217, 252, 292–293
  3rd Army 183
  1st Infantry Division 188, 216, 221, 228, 263, 268, 270, 288–289
  525th Heavy Maintenance Company 129
  34th Infantry Division 228, 280–282
  601st Tank Destroyer Battalion 219–221, 237, 268
  701st Tank Destroyer Battalion 222–223, 232
  751st Tank Battalion 280, 282, 296
  Armor Force 186, 187, 217
  Blade Force 191, 191*fig*, 192–195, 202, 205
  Combat Command A 221, 222, 226, 227, 230*fig*, 230, 237, 296
  Combat Command B (CCB) 186, 192, 198, 200, 203, 205, 206–209, 216, 217–218, 220–221, 228, 235, 237, 241, 290, 295, 296, 299
  Combat Command C 221, 224, 235–237
  Combat Command D 224
  Command and General Staff School (CGSC) 223
  Desert Training Center (DTC) 185–186
  Eastern Task Force 188
  Hart Force 192–194
  Reserve Officer Training Corps (ROTC) 195
  Task Force Benson 274, 279
  Western Task Force 188
Unternehmen Braun 189
Unternehmen Eilbote 218, 221
Unternehmen Eilbote II 222, 225–256
Unternehmen Fliederblüte 285
Unternehmen Frühlingswind 227, 228, 244
Unternehmen Herkules 36, 80, 114
Unternehmen Morgenluft 227, 228, 236
Unternehmen Ochsenkopf 244–245, 249–250, 302
Unternehmen Sturmflut 238
Unternehmen Theseus 36, 40, 41, 62

Vaerst, Generalmajor Gustav von 15, 33, 53, 119, 120–121, 147, 261, 283, 284, 299
Vallentin, Brigadier 12
Via Balbia 15, 16, 19, 38, 74, 76, 83, 179, 213

Wadi Akirit 256, 261, 274, 276–279
Wadi Chafrou 293
Wadi el Aredj 263–264
Wadi Faregh 12, 15
Wadi Hallouf 259
Wadi Marguellil 280, 281
Wadi Medjerda 298
Wadi Negueb 259
Wadi Zigzaou 253, 264–265, 267, 275
Wahl, Hauptmann Wolfgang 47, 78, 103
Ward, Major Richard E. 64, 66
Ward, Major General Orlando 186, 217–218, 221, 222, 223, 224, 229, 235, 243, 267–268, 272
Waters, Lieutenant Colonel John K. 194, 195–196, 201–202, 203, 208, 232–233, 234
Weber, Generalmajor Friedrich 244
Wechmar, Oberleutnant von 36
Weir, Brigadier Stephen 99, 100
Westphal, Siegfried Oberleutnant 61, 123
Whitehead, Lieutenant Colonel J.B. 159
Williams, Major Edgar 127, 162
Willison, Brigadier 66, 68, 74, 78, 79
Wingfield, Major Anthony D.R. 17
Witzig, Major Rudolf 189, 193, 195–196
Wolz, Oberst Alwin 58, 59
'Woodcock' position 158, 161

Zaghouan 299
Zappala, Tenente Colonnello Salvatore 89
Ziegler, Generalleutnant Heinz 227, 234, 235–237, 243, 256, 258
Zucxo, Colonnello Pietro 89
Zügener, Hauptmann 121